

JULY  
1947

# CHEMICAL PROCESSING

PREVIEW

*In this issue*

159 Articles Covering

NEW SOLUTIONS of  
PLANT PROBLEMS

MATERIALS HANDLING

DEVELOPMENTS in  
PRODUCTION MATERIALS

PROCESS INSTRUMENTS  
and CONTROLS

PRACTICAL IDEAS  
ADAPTABLE to PROCESSING

MACHINERY and EQUIPMENT  
DEVELOPMENTS



Butyl rubber properties permit its extrusion into a large tube . . . resistant to the action of many chemicals . . . and highly resistant to gas diffusion.

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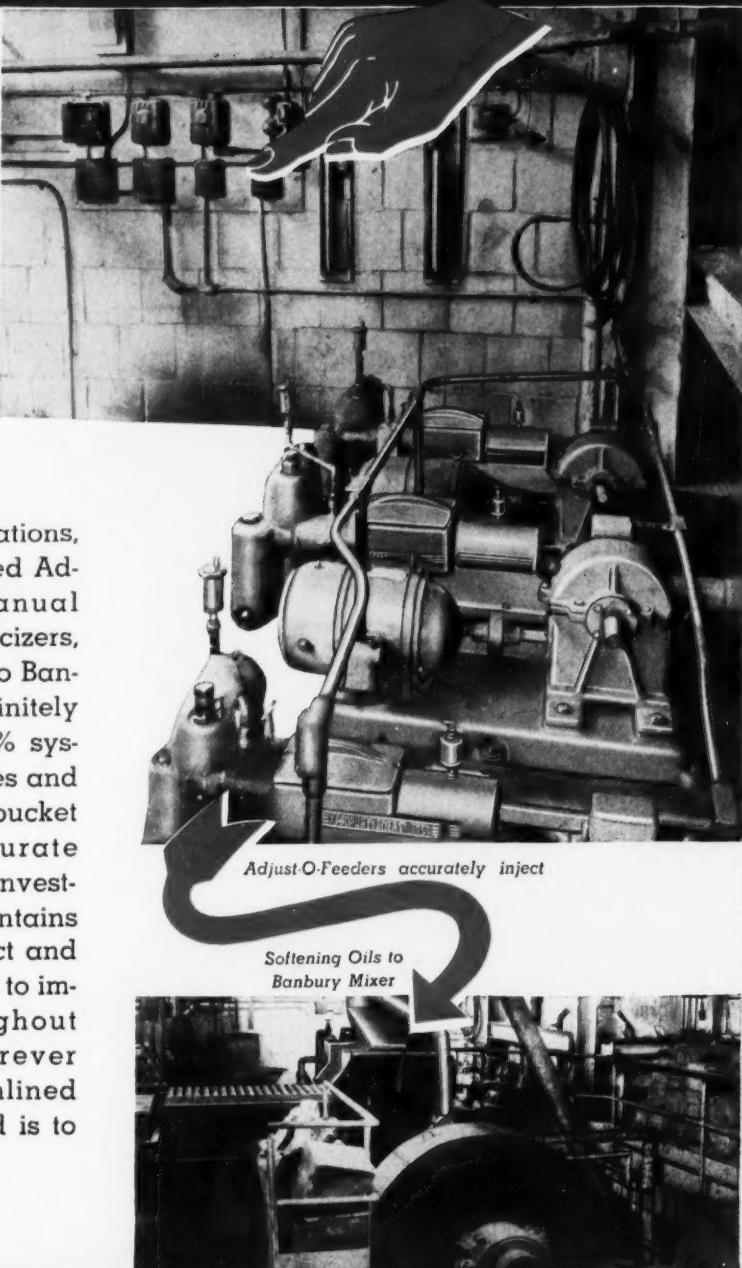
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Technical service representatives in principal cities of the United States, Canada and Mexico.



*"That's Interesting"*

### Whites Recovered from Broken Egg Shells by Centrifuging

In large scale egg breaking operations small quantities of egg white are left in the shells. In the aggregate this amounts to as much as 1½ pounds per case. The marketing experts of the United States Department of Agriculture call attention to this important loss.

These whites are now being recovered by centrifuging the shells. Such whites are not suitable for food but are fit for industrial purposes. The recovered material is sold at "technical albumen" for application in adhesive, paper sizing, leather coating operations.

### 24,000,000,000 Steel & Tin Containers Per Year

Steel and tin containers are now produced at the rate of 24,000,000,000 a year. A century ago, a can of food cost about a dollar. High speed production methods have lowered the price to a mere fraction of this. Standardized designs have lowered the cost of the can itself to about 2c.

### Aluminum Fruits Growers Car Weight 3½ Tons Less

The new aluminum refrigerator car developed by Reynolds Metals Co. for Fruit Growers Express weighs approximately 3½ tons less than conventional cars now in use. Aluminum sheathing requires no rust removal or painting. Repairs can be made easily with no change in shop methods. (Reynolds Metals Co., Louisville, Ky.)

### Luminous Sky Writing

Soon sky-writers will be saying it in colors. Chemical developments will enable them to write in red, blues and browns and after dark they will utilize material to produce a luminous "smoke." (Calco Dyleines & Bylines).

### Any Mail Today?

There are some 6,173,000 rural mail boxes. It is estimated that some 29,508,000 persons are served through them by the rural postal service. Thirty two thousand routes are required to serve these people.

### Perfumed Matches

Perfumed matches for overcoming unpleasant odors of cooking, smoke, etc. are featured by a California company — B & R Fabricators, Inc., San Jose, Cal.

(Continued on next page)

For more information on product at left, specify CP 1764  
... see information request blank between pages 2-3.

*"That's Interesting"*

#### Imports of Babassu Kernels, Oil Authorized

The United States Department of Agriculture has announced that an initial authorization to import 250 tons of babassu kernels or babassu oil from Brazil, for domestic consumption will be granted to any person making application to the Production and Marketing Administration. This within the limits of the International Emergency Food Council allocations.

Second and subsequent authorizations not in excess of 250 tons each will be granted to any person upon application and presentation of satisfactory evidence that the quantity covered by the preceding authorization had been for importation in accordance with the authorization. Applications should be made on form WFO-63-2, obtainable from the Fats and Oils Branch PMA, USDA, Washington, D. C.

#### Aluminum-Plywood Bodies Provide Great Savings in Weight

Truck bodies are now being constructed from a combination of aluminum and Tekwood, veneer kraft laminate made by United States Plywood Corp., New York. This new development affords tremendous savings in weight and has been given the name "Armoredite." One of these new bodies in 12 ft. size weighs 1800 pounds. The bodies are made by Electric Boat Co., wartime makers of submarines. The body is made up of sectional flanged panels secured together and supported by magnesium framing. When damaged, any panel may be removed and renewed by die-formed replacements.

#### Break-point Chlorination Reduces Bacterial Contamination; Chlorine Gas Unit Effective

Tests show that break-point chlorination aids in reducing bacterial contamination throughout canning plants and makes easier the removal of any slime that may develop. For example, contamination of corn during all the various steps in canning was decreased in a range of from 34 — 87 per cent below unchlorinated lots. Chlorine gas units, although of higher initial cost, were found more versatile than simple hypochlorinator pumps. Other advantages of the gas unit are that it is less expensive to operate and can be used to administer massive doses of chlorine to plant water during clean-ups, and therefore do a more efficient job.

(Continental Can Co.—Research Dept.—100 East 42nd St., New York, N. Y.)

#### Hydrogen Peroxide Used to Sterilize Milk in Italy During the War

During the war, high purity hydrogen peroxide was used to sterilize milk in Italy. Italian chemists reporting to the United States Army's Quartermaster Corps state that the process is simple and effective. Important factors are adequate time and hydrogen peroxide of 30 percent concentration, stable, and free from lead, arsenic, or any heavy metals. Two percent of the chemical by weight sterilizes milk in about 8 hours, and the effect lasts for at least three days — without any refrigeration.

#### Use of Aluminum Cuts Weight of Clamps, Pipe Wrenches and Indicating Calipers

The use of aluminum in tools offers the advantages of light weight, strength, as well as non-sparking and corrosion resistance features. Examples of such tools are found in forged aluminum clamps and pipe wrenches produced by H. M. Shick Products, San Francisco. Weight is about one-third that of heavier metal types. Also of aluminum is an indicating caliper made by Farrel-Birmingham Co., Inc., Ansonia, Conn. This is used to test paper calendar rolls, sheet metal rolls, rubber mill rolls, large shafts and cylinders which must be finished to the utmost accuracy. Most of the parts are made of Alcoa Aluminum Castings.

*(Continued on third cover)*

# Mass Lubrication for Mass Production

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Grease**

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Various types of lubricant pumps and injectors are available to meet specific requirements.

Cut lubrication time and cost—increase production with proven Lincoln Centro-Matic Systems.

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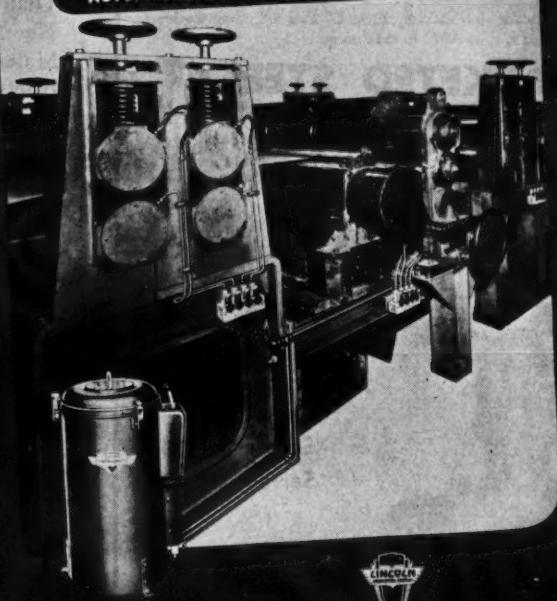
BULLETIN NO. 801

**LINCOLN CENTRO-MATIC  
LUBRICATING SYSTEMS**

for MASS LUBRICATION

WITH SERIES SL-3 INJECTORS

AUTOMATICALLY CONTROLLED — MANUALLY TIMED



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Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

847-8

When inquiring specify CP 1765 . . . see information request blank, pgs. 2-3

# REED Jacketed VALVES

## JACKETED CAST IRON

Reed Jacketed Cast Iron Valves have jackets cast integral with the body and are furnished with flanged ends only. Flanges are the next nominal size larger than the valve size, that is: 1" valves have 2" end flanges, etc. All valves are F & D to A. S. A. standard dimensions.

Available only in sizes 1", 2", 3", 4" and 6", line working pressure 125 p. s. i. at 450° F. maximum.

## JACKETED STEEL

Reed Jacketed Steel Valves have fabricated jackets and can be furnished in Standard Series 150 and Standard Series 300. Flanged valves can be furnished in size 1½", 2", 3", 4" and 6", F & D to A. S. A. standard dimensions. Screwed valves in sizes 1½", 2" and 3" only.

Deep stuffing boxes assure effective sealing, and wear on the packing is minimized, as the stem makes only a quarter-turn when the valve is operated.



## JACKETED CAST IRON

Can be supplied with  
BODY ONLY  
JACKETED OR  
WITH BOTH BODY  
AND BONNET  
JACKETED

**Reed**  
**VALVE DIVISION**  
of the REED ROLLER BIT COMPANY

P. O. DRAWER 2119

HOUSTON 1, TEXAS

When inquiring specify CP 1766 — see handy form pages 2-3

Page 4

## CHEMICAL PROCESSING PREVIEW

Edited for Production and Laboratory  
Men in Chemical Process Industries

VOL. 10

JULY, 1947

NO. 7

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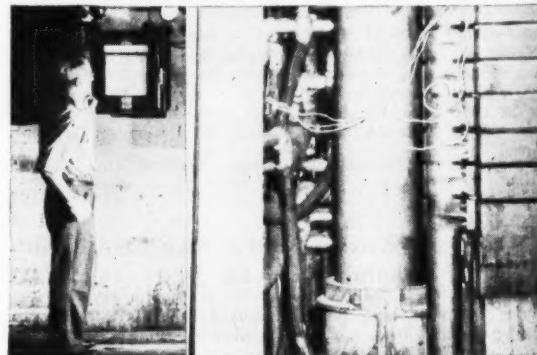
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When inquiring specify CP 1767 — see handy form pages 2-3



### SPEEDOMAX PYROMETER RECORDS PLASTIC-CURING TEMPERATURES

Curing temperatures in the Formica Insulation Co. laminating presses are recorded in exceptionally rapid succession by a Speedomax high-speed pyrometer. Speedomax's high sensitivity and unusual "across-the-chart" speed enable it to keep pace with fast-changing temperatures, and to handle short ranges and low temperature with full accuracy. Ask for Catalog ND46(1)



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Jrl. Ad N-33A-680(1a)

When inquiring specify CP 1768 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

## The Cover

Large tubing made by extrusion, as pictured on the cover, is one of the many uses for Butyl rubber. An article citing other uses of this synthetic appears on page 22.

### How To Get More Product Information

To make it convenient for readers to locate information in CHEMICAL PROCESSING Preview there is . . . on page 96 . . . a complete directory of all products that are featured in editorial articles or described in the advertisements in this issue; On page 98 you will find a list of the advertisers whose products are described in this issue; And to make it easy for you to secure additional information quickly there is a handy request slip inserted between pages 2 and 3.

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If you have changed your business address recently please notify the publishers promptly so that there will be no interruption in the delivery of CHEMICAL PROCESSING Preview. Please be sure to give both your old and new address; Include your title, the name of your company and the main product they manufacture. Full information will secure prompt action.

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### Have You a New Product?

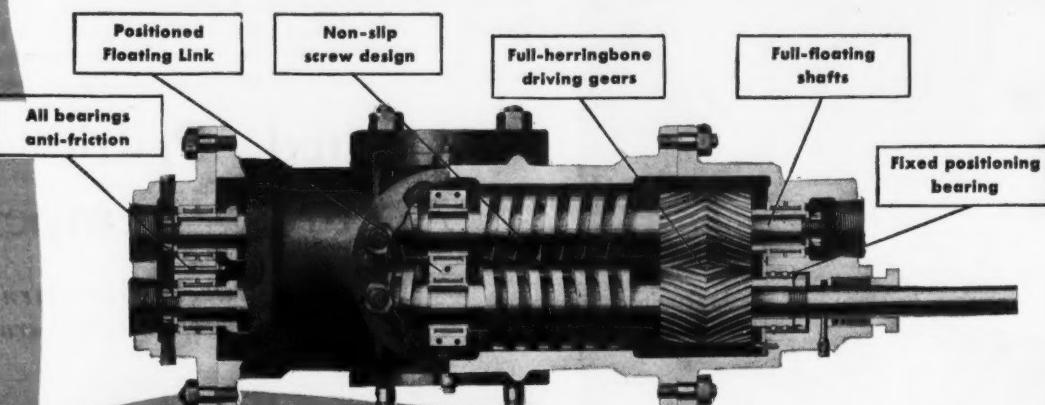
If you have recently developed a new or improved product, a piece of laboratory or plant equipment or a new material, of specific interest in any line of chemical process manufacturing . . . send information regarding it to our editors.

If it meets their requirements, they will introduce it to the chemical processing industries through the editorial pages of CHEMICAL PROCESSING Preview. More than 25,000 copies of this publication are effectively distributed through the chemical processing industries.

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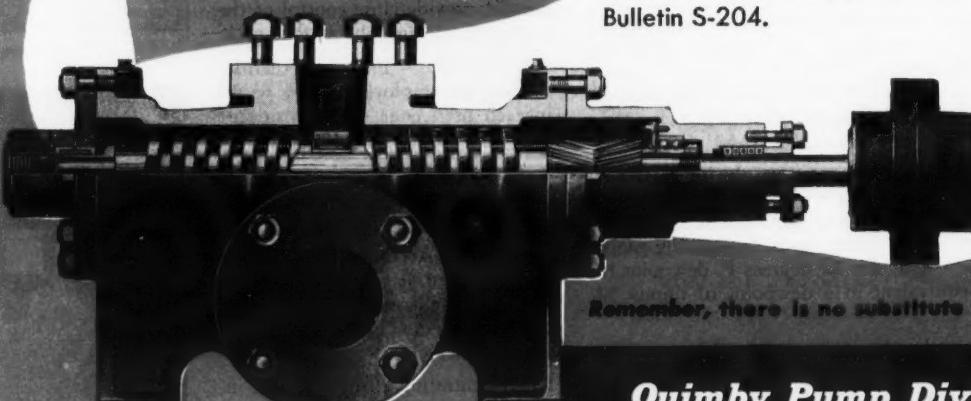
# QUIMBY THE ORIGINAL SCREW PUMP

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District Offices in Principal Cities



Screw • Rotex  
Centrifugal

When inquiring specify CP 1769 . . . see information request blank, pgs. 2-3

# Hydrogen-don Braze Process Kept Dry, Pure by Activated Alumina Absorbers

**Each unit operated, reactivated alternately to provide constant, close control of moisture content**



Hydrogen in tank (left) is dried by dual unit. Its number 1 tower is visible here

**P**ROBLEM — In designing and testing new electronic tubes, engineers of Westinghouse Electric Co., Pittsburgh, Pa. were faced with the problem of keeping a hydrogen atmosphere in ovens used in brazing, extremely dry and free from impurities. This is necessary, if formation of oxides on the surface of the metals being brazed, is to be avoided. The hydrogen atmosphere is contained in the ovens at a temperature of 1150° C.

**SOLUTION** — Dehumidification unit, employing activated alumina was installed. This is capable of drying 250 standard feet of hydrogen per hour at a working pressure 20 psig (pounds per square inch) from an entering moisture content equivalent to a plus 32 degrees F. dewpoint to a moisture content equivalent to a dewpoint of minus 50 degrees C.

This unit — a Lectrodryer — eliminates moisture from gases and air by forcing them through chambers or towers containing beds of activated alumina — a process known as solid adsorption. Although the physical phenomenon of solid adsorption is not completely understood, it has definitely been demonstrated that a distinct affinity exists between certain types of surfaces and the molecules of certain gases which causes the gases to attach themselves to the surfaces of the solid. In effect, the gas is condensed to a liquid and in so condensing gives off latent heat. It has been found that temperature is an important factor in affecting the affinity of certain gases for attaching

themselves to solid surfaces. The application of heat to a solid will cause a release of the adsorbed liquid. This application of heat is known as reactivation and is the basic principal by which this Lectrodryer equipment offers complete continuous drying in one self-contained machine.

The unit referred to here is a dual-absorber with adsorbent beds so arranged that reactivation and drying are accomplished simultaneously. In the accompanying illustration the hydrogen tank may be seen at left and to the right one of the two towers of the Lectrodryer.

The process of reactivating one adsorber bed after it has taken up its load of moisture consists of applying heat to the moisture laden bed through embedding heating

elements within the adsorber. The heating elements are powered from a 110 v., single phase, 60 cycle power supply. Standard equipment uses steam, gas or electricity in providing reactivating heat.

**RESULTS** — After several months test the equipment has efficiently handled this continuous drying problem. Moisture content held to desired dewpoint equivalent of minus 50 degrees C. Operation of the unit is simple and overall costs are low.

PITTSBURGH LECTRODRYER CORP., Dept. CP, 1024 W. 23rd St., Pittsburgh, Pa.

When inquiring specify CP 1770 — see handy form pages 2-3

## Laminated Plastic Production Aided by Accurate Temperature Measurement

*Temperature measurements help to maintain the electrical and mechanical characteristics of finished plastics*

**P**ROBLEM — In the plant of the Formica Insulation Company, Cincinnati, Ohio phenolic and melamine laminated plastics are made. Steam pressures at the press were the sole guide to determine temperatures in the pack. Since there an appreciable amount of heat of reaction involved, this method did not provide close control of the temperature throughout the pack.

**SOLUTION** — Fine wire thermocouples are employed at two points in each press, one at the inside of the pack and one outside. Diagram shows the arrangement of thermocouple installation. A six point recorder serves three presses, recording at the rate of seven seconds per point. At this rate, it makes a complete tour of six couples in 42 seconds, a speed which is ample to show a detailed record for each couple.

By concentrating all temperature information on a few instruments, the job of watching temperatures and keeping records was considerably simplified.

**RESULTS** — Accurate temperature measurements are maintained which provide electrical and mechanical characteristics desired in the finished plastics. Pyrometer charts provide permanent evidence of

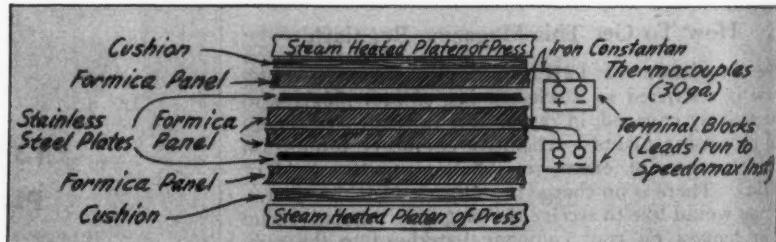
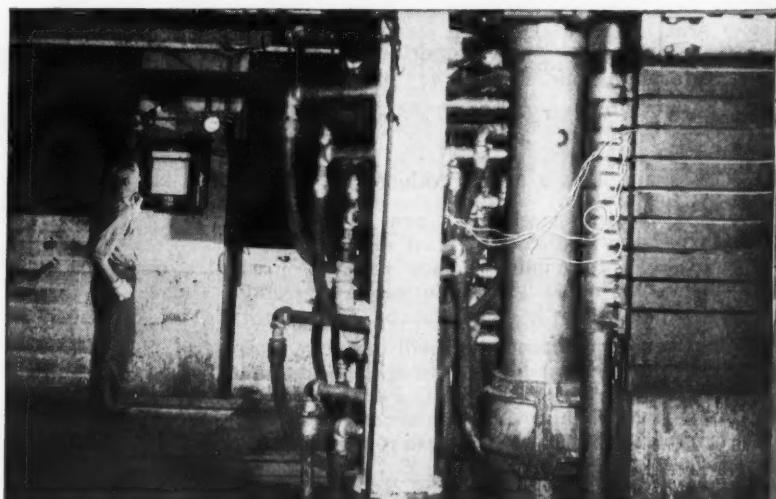


Illustration shows method of installing thermocouples in pack



Curing temperatures in laminating press are detected by fine-wire thermocouples. Temperatures are recorded by instrument in background

correct curing. Research men find these temperature records valuable in studying the nature of the reactions which take place during the curing process.

Additional information is available on request.

LEEDS & NORTHRUP COMPANY, Dept. CP, 4934 Stenton Ave., Philadelphia 44, Pa.

When inquiring specify CP 1771 — see handy form pages 2-3

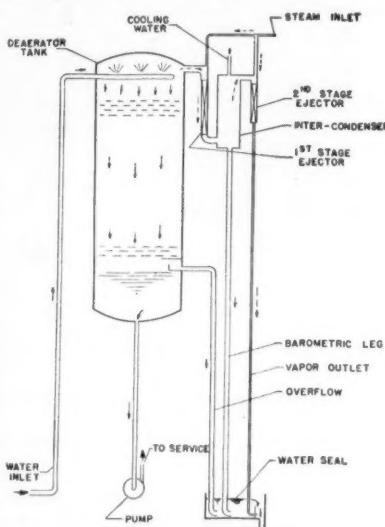
## Dissolved Oxygen in Cold Water Removed by Vacuum Daeerator

Equipped with two-stage ejector and steam saving inter-condenser or with motor driven vacuum pumps

PROBLEM — Removal of oxygen dissolved gases from cold water to prevent corrosion at low temperatures.

SOLUTIONS — Equipment known as the Liquon Vacuum Daeerator has been designed for this purpose. The unit consists essentially of a chamber in which the water is broken up into thin sprays and films to permit the release of the dissolved gases from the exposed water surfaces, and a stem ejector or vacuum pump to maintain the necessary vacuum corresponding to the boiling point of the water at its comparatively low temperature.

In the gas separating chamber, the water is first sprayed



Vacuum Daeerator Installation

at the top, and then trickles down in thin films over a fill of staggered non-corrodible trays or slats. The deaerator shell is long enough for the necessary height.

When steam is available, the required vacuum is created by a two-stage ejector with an inter-condenser between. The condenser is provided to reduce the amount of gas to be handled by the second stage of the ejector, thus saving steam. Motor driven vacuum pumps are used where steam is not available.

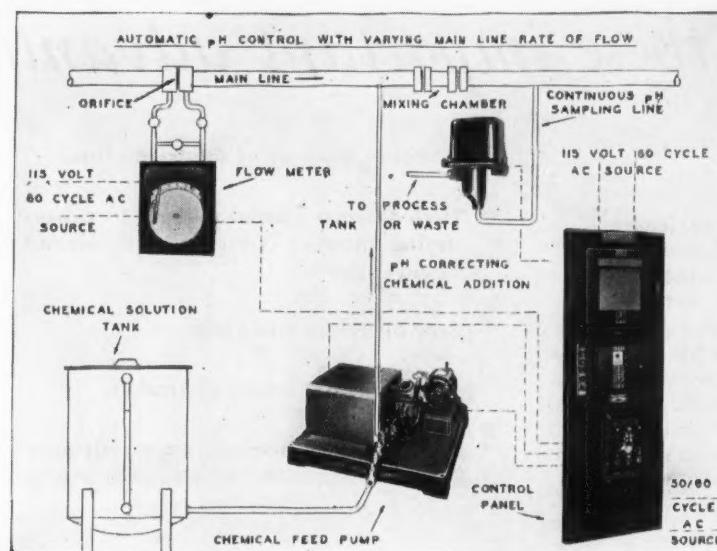
RESULTS — Aids in eliminating corrosion which destroys iron or steel pipe lines and rust deposits which clog pipe lines and make the water unsuitable for many purposes.

LIQUID CONDITIONING CORP., Dept. CP, 114 East Price St., Linden, N. J.

When inquiring specify CP 1772 — see handy form pages 2-3

JULY, 1947

# Automatic pH CONTROL with Varying Main Line Rate of Flow



Milton Roy Pumps are controlled volume metering units, designed to meter and pump practically any liquid in volumes as low as 1 pint per hour to as high as 23 gallons per minute per pump side and against pressures as high as 20,000 lbs. per square inch. Because of the high degree of accuracy of volumetric measure made possible by the Milton Roy step valve design, these pumps have found many applications as components of automatic chemical feed systems.

In the system shown, for example, the capacity of the Milton Roy pump is automatically compensated for two variables — rate of flow and pH value. Pump motor speed is directly proportional to rate of main line flow and length of stroke of the pump is automatically adjusted by the pH controller. Thus the pH controller is only required to follow changes in chemical characteristics of the system, eliminating "hunting" and resulting in uniform pH correction.

The necessity for constant and automatic pH control is well recognized in many applications including water treatment, pharmaceutical manufacture, paper making and chemical processing.

The many automatic pH control systems designed by Milton Roy and now in successful operation demonstrate the suitability of Milton Roy equipment for these applications.

For further details on pH control equipment and other automatic Milton Roy Chemical Feed Systems for various applications write for Bulletin 468 and Technical Paper No. 54 "An Application of Electronics in Automatic Chemical Feed Systems."



**MILTON Roy COMPANY**



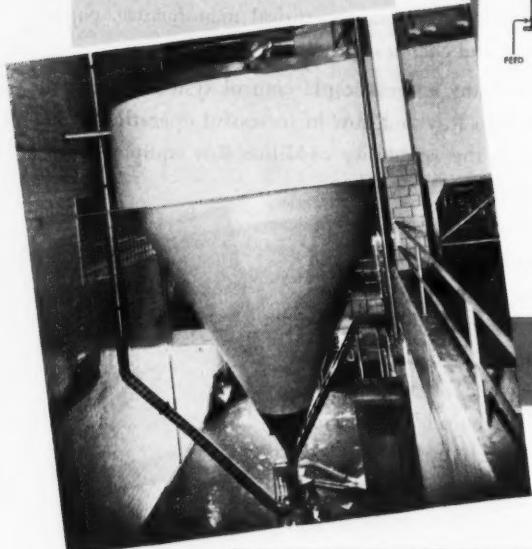
1310 E. MERMAID AVE., CHESTNUT HILL, PHILA. 18, PA.

When inquiring specify CP 1773 . . . see information request blank, pgs. 2-3

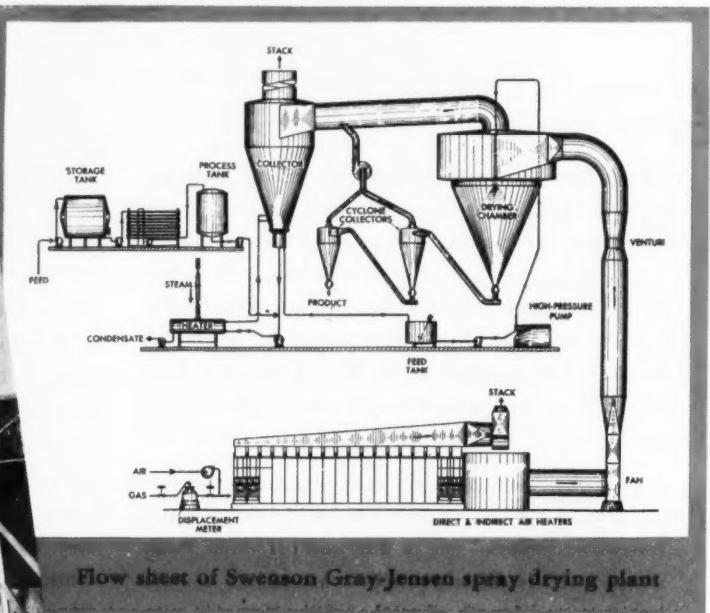
# SPRAY DRYING

## with the Swenson Gray-Jensen Process offers these important advantages...

Swenson Gray-Jensen Spray Drying is now successfully used in the production of such materials as zinc sulfate, manganese sulfate, pentaerythritol, starch, cascara, and dried distillers' solubles. By means of plant-scale test runs in Swenson's new Spray Dryer Research Plant, procedures are established and equipment is adapted to various chemical processes. This service is performed at reasonable cost. We invite your inquiry.



- 1 Complete recovery of solids—no loss.
- 2 High thermal efficiency—heat in exhaust gases from drying chamber is recovered by second-stage use in liquid collector.
- 3 Low operating labor cost.
- 4 Controlled uniformity of product.
- 5 Protection to heat-sensitive materials—no contamination.

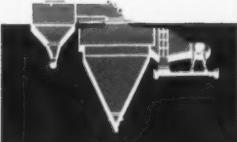


Flow sheet of Swenson Gray-Jensen spray drying plant

**SWENSON EVAPORATOR CO.  
DIVISION OF WHITING CORPORATION**

SPRAY DRYER DEPARTMENT, 221-L N. La Salle St., Chicago 1, Ill.

Export Department 30 Church Street, New York 7, N.Y.



When inquiring specify CP 1774 . . . see information request blank, pgs. 2-3

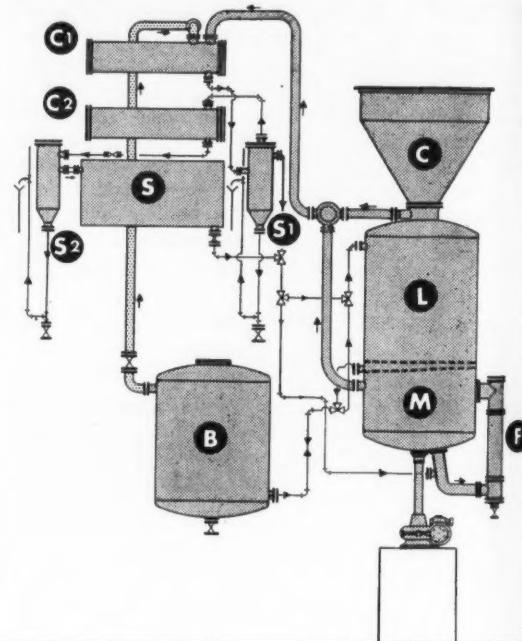
## New Solutions

Extraction Yield High, Overall Cost Low With Solvent Process

Plants designed for requirements of unlimited range of materials

**PROBLEM** — Improvement in extraction processing techniques is the goal of many operators in the chemical and allied industries. This interest applies to a wide variety of products: animal oils and fats, sulfur and vegetable oils, alkaloids, insecticides, waxes, resin asphalt, and bitumen, chlorophyll, essential oils, lactic acid, spent fullers earth, spent catalysts, cotton and wool waste (regenerated) and carbazol.

It is, of course, desirable to have initial cost of equipment held to the lowest possible level without sacrific-



Layout of vegetable oil recovery plant

of operating efficiency, productivity, product quality and economy in maintenance.

Vegetable oils may be cited as a representative material to illustrate the various problems to be met in extraction operations. For example, one frequent difficulty is the high loss of oil which remains in residues. This sometimes amounts to 10%. Another problem is obtaining cleaner oils and oils with better color. Conservation of solvent is, of course, of greatest importance.

**SOLUTION** — The Merz Process of solvent extraction meets the requirements involving an unlimited range of materials. The plants are, in every case, designed for the material to be treated. Unknown matter is previously tested to determine the best method of treatment. The plants are relatively simple in design and nearly automatic in operation. They allow for working at pre-determined temperature. They are therefore particularly suitable for selective extracting of two or more solutes from one raw material. Merz plants can be arranged to work in series.

The diagram shows how installation in an oil extraction plant recovers vegetable oils. The plant consists of the

## New Solutions

main parts (1) The Extractor, (L) combined with the Fat Collector (M); (2) The Misella Tank (B) and (3) The Condenser (H), arranged above the Automatic Water Separator (F).

The crushed seed is collected in the hopper (C). From that point it is fed into the Extractor (L) through the feeding hole (S). In the meantime, solvent in tank (B) is heated, the slight pressure on the rising solvent vapor forcing it into the extractor (L). The hot solvent dissolves the seed very rapidly and this solution then passes through a specially designed filter bottom to chamber (M) connected with the evaporator (F).

Filter bottom retains all the floating particles without the use of filter cloths. General evaporation of the solvent commences at once. The oil maintains the original color and quality due to continuous and rapid circulation.

While the concentrated solution passes back to (M) and is there mixed with fresh solution coming from (L), the solvent vapor rises to condenser (H). This condenser allows the bulk of the solvent to be returned hot to extractor (L). By this arrangement great saving in heat and time is effected. The process is repeated automatically and continuously until a test indicates that practically no oil remains in the seed.

The weak solution in (L) is not distilled as a rule but is collected in (B), and used again with the succeeding charge of raw material as described above. Any solvent remaining in the seed residues as well as in the extracting oil is driven off by live steam. This part of the process is considerably accelerated by use of a suitably designed mechanical stirring gear. The solvent recovered is also collected in tank (B). The oil is drawn off at (U) and the residues removed through door (G). The latter operation is performed automatically in a few minutes by setting the stirrer in motion.

**RESULTS** — Practically the whole oil content is extracted. There remains only about 1% of oil in residues, whereas loss frequently encountered is 10%. This latter figure is a great loss in processing seed of low oil content such as soya bean and cottonseed. Oils recovered by the Merz Process are of pure natural color and cleaner than those obtained by pressing. (Complete information on Merz process equipment, as it pertains to specific applications, on request.)

ACME COPPERSMITHING and MACHINE CO., Dept. CP, Orelan, Pa.

When inquiring specify CP 1775 — see handy form pages 2-3



### Offers Pocket Manual for Prospective Users of Electric Precipitators

Practical information concerning application of electric precipitators for collecting industrial dusts and mists is contained in a 28-page work manual. 10 operational diagrams. Work-pocket size.

Answers questions of practicing engineers, covering all factors of interest to prospective users. Subjects discussed include precipitator types, functional parts, sources of high-voltage ionizing potential, comparison of mechanical and Kenetron rectifiers, ballast resistance, etc. Booklet, "Cottrell Electrical Precipitators," will be forwarded on request.

WESTERN PRECIPITATION CORPORATION, Dept. CP, 1016 W. 9th St., Los Angeles, Calif.

When inquiring specify CP 1776 — see handy form pages 2-3

JULY, 1947

# Why Non-Porous?



*Chemical Porcelain for Corrosive Liquids?*

THE ability of Lapp Chemical Porcelain to resist corrosion is due in large measure to the non-porous nature of this ceramic material. Not only is this material inert to most corrosive acids, but its non-porous characteristic means that there is no absorption, no capillary forces from absorbed liquids, no exposure of the material other than the surface to corrosion. At Lapp "vitrified" and "non-porous" are not loose or relative terms. They refer to a Lapp ceramic material which can withstand the routine dye-immersion test: exposure of a test sample to a penetrating dye under pressure of 100,000 lbs./in.<sup>2</sup> for a 24-hour period without trace of penetration.

Valves and other processing equipment of solid Lapp Porcelain have brought dependable operation and laboratory purity to hundreds of chemical processing systems. Write for literature. Lapp Insulator Co., Inc., Process Equipment Division, Le Roy, N. Y.



When inquiring specify CP 1777 . . . see information request blank, pgs. 2-3

## New Solutions



### THE BEGINNING OF A NEW ERA IN THE REFINING OF GLYCERIDE OILS!

The remarkable results achieved in vitamin recovery from fish oils is but one indication of Solexol's revolutionary impact in the refining of all animal, vegetable and marine oils. Production "specs" on a wide range of products are available. Write today.

### ... and the benefits are only beginning

Administered by competent hands, the benefits of vitamins range from a better start in life for new-born babies to better health for grown-ups suffering from dietary deficiencies . . . and the benefits are only beginning.

From here on there need be no scarcity of high potency vitamin A . . . because a revolutionary new process, called Solexol, greatly increases the recovery of vitamins from existing supplies of fish oils without any processing loss whatsoever . . . producing in their most effective natural form, vitamins that are practically tasteless and odorless, yet chemically unchanged.

Moreover, Solexol affords an inexpensive means of concentrating vita-

mins to the highest effective potency. Shark liver oil, for example, attains a potency of 400,000 International Units per gram when concentrated 16 times by the Solexol Process, and can be further concentrated, if desired, with total vitamin recovery well over 90%.

Utilizing for the first time, a purely physical solubility principle that separates oil fractions according to molecular weight and structure, the Solexol Process can also be applied with equal efficiency to the refining of other marine, vegetable and animal oils . . . resulting in greater yields of more highly refined products at the lowest net refining cost in history.

Full information may be had by

writing: Glyceride Processes Division,  
The M. W. Kellogg Co., 225 Broadway,  
N. Y. 7, N. Y.

## SOLEXOL

Decolorizes, separates, extracts, concentrates and deodorizes:

VEGETABLE OILS  
Soybean Peanut Cottonseed  
Linseed Tall Other similar types

ANIMAL PRODUCTS  
Tallow Waxes Greases

MARINE OILS  
Fish body oils and liver oils having widely different physical, chemical and vitamin-potency characteristics.

FATTY ACIDS From all sources  
Licensed jointly by The M. W. Kellogg Co. and  
The Chemical Foundation, Inc.

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GLYCERIDE  
PROCESSES  
DIVISION

## THE M. W. KELLOGG COMPANY

Engineers and Economists to International Industry

NEW YORK

JERSEY CITY

LOS ANGELES

TULSA

HOUSTON

TORONTO

LONDON

PARIS



When inquiring specify CP 1778 . . . see information request blank, pgs. 2-3

Page 10

### Chrome Plating Acid Fumes Spray Blanketed by Plastic Tubes

Miniature polystyrene "pillows" float on bath, move apart to admit work

#### PROBLEM —

In a large plating plant, spray, fumes and loss of acid were constant problem. Chromium plating is unique in that the plating bath is strongly acid with sulfuric and chromic acids and that it must be carried out at a comparatively high temperature. The hydrogen liberated in the plating operation carries from the bath by entrainment appreciable quantities of acid spray which is corrosive and irritating, therefore a fume removal system is usually required.



Close-up of tubes blanketing bath

#### SOLUTION —

Hollow tubes extruded of Styron are floated on chrome plating solutions in sufficient depth to blanket the bath.



Plating work moves easily through tubes afloat on bath

The tubes are cut in three inch lengths and closed at each end to resemble miniature pillows. One of the advantages of these tubes is that they do double duty by protecting workmen from the fumes and preventing the loss of acid in spray form when sucked through the ventilating system. The lightweight tubes move apart easily when a rack of objects to be plated is lowered into the solution. They also move back into place around the rack spine, completely covering the bath while the plating is accomplished.

Styron is resistant to acids, is light in weight and has a smooth texture. It is shatter-proof and very few tubes are lost when the plated objects are taken from the bath.

RESULTS — In addition to worker protection, conservation of chromic acid, heat and electric power in the plating room are also saved by cutting down on the quantity of air withdrawn by blowers. (Chrome-Lock Tubes are a product of Udylite Corporation, Detroit, Michigan).

DOW CHEMICAL CO., Dept. CP, Midland, Mich.

When inquiring specify CP 1779 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

## Freeze Roll Resurfaced in 4 Days

*Stainless steel applied by Metallizing without removing roll*

**PROBLEM** — Freeze roll in synthetic rubber plant was to be resurfaced. Its size (9 ft. diameter and 9 ft. length) and great weight made removal from its permanent position a lengthy and costly procedure.

**SOLUTION** — It was decided to resurface the roll with a coating of Metcoloy No. 1,  $\frac{3}{16}$  of an inch thick on the radius, by Metallizing.

Special lathe was constructed and also a special grinder with which to finish the coating after spraying. Both were



constructed so as to be mountable on the framework of the machine of which the roll was a part.

It was necessary to have the surface perfectly true, so before starting the Metallizing operation a light cut was taken clear across. Two tools and six Metco Type 2 E guns were mounted on the lathe carriage. The first tool was set to cut a rough, tearing thread and the second to remove loose slivers.

The guns applied the entire thickness ( $\frac{1}{16}$  of an inch on the radius) in one pass, so that in this case as in the others handled by this procedure, preparation and Metallizing were done simultaneously in one pass across. The grinding operation followed.

METALLIZING ENGINEERING CO.,  
Dept. CP, 38-14 30th St., Long Island  
City 1, N. Y.

When inquiring specify CP 1780  
— see handy form pages 2-3

For more information on product at right, specify CP 1781  
— see information request blank between pages 2-3.

# LOW HEAD CIRCULATORS

A NEW TOOL for Engineers from the Engineering Laboratories of **MIXING EQUIPMENT CO., INC.**

### Making Possible the Use of Standard Agitators as Low Head Circulators

The use of propeller agitators for the controlled circulation of liquids is an accepted procedure. However, considerable difficulty due to inaccurate and incomplete information concerning performance characteristics has always existed in applying such devices. Because of the continued demand for such devices, Mixing Equipment Company has made the essential performance tests, cor-

relating accurately the rate of flow in gallons per minute for various heads up to and including twelve inch. Since these data are entirely dependable, it will be possible to use Lightnin Mixers and Mixco Agitators as LOW HEAD CIRCULATORS with entire confidence when job requirements can be stated in gallons per minute at a definite head.

### INFORMATION NECESSARY TO APPLY

It will be seen that it is essential that the head be accurately specified and that the gallons per minute required be clearly stated, together with physical characteristics of liquid handled. Otherwise, the selection of the proper circulator is indeterminate. The Company assumes no responsibility for computing or estimating heads or gallons per minute for any given operation. Full responsibility will be assumed for selecting the proper circulator to meet customer's requirements.

An excerpt from engineering tables on file in our Engineering Dept. is shown so that sensitivity of flow in relation to head can be observed. Shown are capacities and heads for a 20" dia. propeller, operating at standard speed of 420 R.P.M.

Head (Inches)	1"	2"	4"	6"	8"	10"	12"
Gallons per Min.	6040	5170	4840	4300	3840	3440	3080

### LIMITATIONS

No claim is made for the circulators to take the place of pumps. It will be noted that a twelve-inch head is all that can be economically achieved. Efficiency and performance curves or tables are not issued. The data presented applies solely to the agitators standard with Mixing Equipment Company and wide variations will be noted if other impellers with different pitch-ratio, blade area and shape of blade are used. In each case the propeller must be surrounded with a shroud ring or design performance will

not be achieved. This shroud ring must provide proper clearance which will be specified by us for each application.

Unlike standard applications for mixers and agitators, data at present is limited to water-like materials, no data having been developed for viscous conditions.

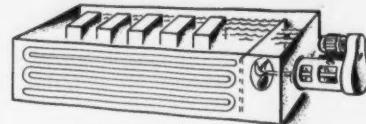
Since horse power is affected by both head and specific gravity, the selection of mixer model and motor is made after selection of impeller size.

### TURBINE APPLICATIONS

While it is in general more simple to apply a propeller as a low head circulator, it is also possible to so apply radial impellers of proper design to achieve the same results. Slightly higher heads up to 18" may be

obtained with radial impellers. These will not be offered, however, except where limitations of shaft length or horse power requirements favor that choice.

### SUGGESTED USES AND POSSIBILITIES



**BRINE CIRCULATOR.** The use of a propeller for brine circulation in ice making is a common application. Here the user from experience specifies the gallons per minute ordinarily at low heads from one to six inches, the result being faster heat exchange from ammonia coil to brine and from brine to the ice cans.



**APPLICATIONS IN CALANDRIAS** permit achievement of design performance by controlled velocity through the tubes. This offers the most exact method of predicting heat transfer performance in a closed vessel.



**A SIDE ARM CIRCULATOR** permits continuous addition of chemicals without short circuiting, or permits circulation for heat exchange purposes where the vessel has crowded coil conditions or unconventional heating elements, such as gas-fired tubes, closely packed tube bundles, etc.

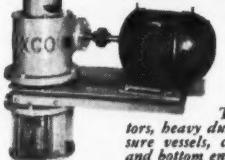
**OTHER APPLICATIONS** which suggest themselves include the use of the device in a draft tube, in a horizontal cylindrical tank to achieve a desired distribution of circulation, or in a vertical draft tube in a conventional vessel so as to produce a predicted velocity in the remaining part of the vessel as for heat exchange with coils or jackets.

### The EQUIPMENT

Side entering propeller mixer, suitable for brine circulators and other horizontal applications. 1 to 25 H.P.



Top entering propeller mixers, suitable for draft tube, side arm circulator and dyeing machines.  $\frac{1}{4}$  to 3 H.P. standard sizes.



Turbine Type Agitators, heavy duty, for open or pressure vessels, calandrias etc. Top and bottom entering. 1 to 30 H.P.

### MIXING EQUIPMENT CO., INC.

1085 Garson Ave., Rochester 9, N. Y.

Please send me the literature checked:  
 B-66 and B-76 Side Entering Mixers  
 B-68 and 68B Permanently Mounted Mixers for Pressure Vessels and Open Tanks  
 B-75—Portable Mixers (Electric and Air Driven)  
 B-77—Laboratory Mixers  
 Mi-11—Operating Data Sheet

Name \_\_\_\_\_  
 Title \_\_\_\_\_  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_



**MIXING EQUIPMENT CO., INC.**

1085 Garson Ave., Rochester 9, N. Y.

# Fork Truck Lifts Load 130 Inches to Ceiling Yet Easily Clears 7 Foot Doors



Fork truck provides extra high tiering to ceiling height; maneuverable in close quarters

*Independent rams raise each section of telescopic lift; forks rise to top of upright before latter begins to extend*

**USES** — This telescopic, tilting hydraulic lift truck provides a lift of 130 inches on a standard fork truck of 83 inch collapsed height. For easy, yet precisely controlled high tiering operations. Special flow control valves enable lifting, lowering or tilting or any combination thereof at the same time under any conditions of load or unload. The several capacities in which the truck is available make it adaptable to a wide variety of materials that lend themselves to movement by fork lift units.

**FEATURES** — The exceptionally high lift is possible because the truck has independent rams to raise each section of the telescopic lift. The forks and uprights thus move independently, the forks raising to the top of the upright before the latter begins to extend. This increased lifting height of 10 inches over standard truck is not only an advantage in high tiering yet the truck can pass through a seven foot door when collapsed and thus stack to ceiling heights where clearances are low as in box cars.

Controls are full automobile type. Brake pedal, steering wheel and foot accelerator correspond to those of a conventional car. "Newmatic" control provides automatic shift through all four horizontal speeds of the truck as the accelerator is depressed and the truck can thus be started only in low speed.

Other features are the short turning radius and great maneuverability.

**DESCRIPTION** — The Sky Lift truck is made in 2000, 3000 and 4000 pound capacities. The "Newmatic" controller provides for selection of any one of the four speeds in accordance with the extent to which accelerator is depressed. The flow control valves which control lifting operations move the tilt at the same speed, regardless of load or lift conditions, and raise and lower forks at regulated speed controlled by the operator. Maximum lowering speed is pre-set and constant under all load

conditions. When operator's foot is off accelerator all current is automatically shut off.

The brake is a newly designed traction brake of disc air-cooled fin type. It is self-aligning, braking through an area of 85 square inches.

Silicone varnish insulation is used on the electrical system. Combined with fibreglas, mica and asbestos, the silicone varnish provides exceptionally effective insulation. It will withstand severe overloading for long periods, even after exposure to temperatures of 300-400 degrees F.

The compact design of the Sky Lift truck permits the use of maximum rubber on drive wheels contributing to tire life and maximum traction. The overall width, across 20" x 7" drive tires on the 4000 pound capacity model, is 33". The design is such that drive wheels are reversible for uneven floor conditions, allowing a four inch increase in width, — for greater stability on poor floors if necessary.

Two, low slung, caster-type hanger brackets mount the 15" x 5" trail tires with full diameter roller bearing assembly. Mechanical design features include flange mounted motor, drive shafts through differential to each drive wheel, spur and bevel double reduction gear train, fully enclosed mechanism throughout, and solid roller uprights, fully accessible for maintenance.

Additional information on request.

AUTOMATIC TRANSPORTATION CO., Dept. CP, 41 W. 87th St., Chicago, Ill.

When inquiring specify CP 1782 — see handy form pages 2-3

## Conveyor's Replaceable Plate Conveyor Belt Pulled Directly by Sprocket Drive

*Plates are cold rolled steel, links cadmium plated, conveyors available in any length and 4-48" widths*

**USES** — For all fixed point-to-point conveying. For light or heavy loads as a single conveyor unit or as a complete conveying system. Now in use in assembly lines for toys, radios, etc. Also for handling bags, cartons in loading operations. Some units are in service in infrared drying operations.

**FEATURES** — Low cost maintenance. When plates in belt are damaged they



Portable, inclined plane conveyor; baffles may be attached to plates to prevent slippage

CHEMICAL PROCESSING Preview

can easily be replaced. Perfectly flat working surface over entire length. Available in stainless steel where sanitary factor is important. There is no slippage as belt is geared to the sprocket. Designed for utmost safety with drive sprocket and motor enclosed. For precision work, units as narrow as 4 inches are available compensating for limited elbow room.

**DESCRIPTION** — Belts are made of cold rolled steel plate with rolled edges forming connecting links. Drive sprocket pulls belt directly, no chain drive is necessary. Links are cadmium plated and have own sets of steel rollers.



Belts as narrow as 4 in. and for use with any length conveyor save space in crowded areas

Standard units employ 18 gauge steel; heavy duty models for operations where load is in excess of 50 pounds per square foot are built of 14 gauge steel to support as much as 300 pounds per square foot. Inclined plane units are available. They are reversible and can be equipped with baffles for use where incline angle is over 14 degrees.

These conveyors are frequently used for two level service. Parts may be conveyed to end of line, then placed on lower belt level. (Automatic safety switch can be placed on lower belt to prevent any interference with belt mechanism).

Where height is restricted the SC-3 model is used to advantage. Three inch pitched belt links allow nine minimum driving sprockets permitting use of conveyor with as little as 10 inches in height.

Conveyors can be furnished in any length from 5 feet to 150 feet or more. Speeds up to 60 feet per minute. Belt widths available in standard conveyors 6-36 inches and also a 48 inch width. Variable speed drivers available at slight extra cost.

Additional information on request.

STEEL PARTS MFG. CO., Dept. CP, 222 South Morgan St., Chicago, Ill.

When inquiring specify CP 1783 — see handy form pages 2-3



## How to Stop-Watch a Production Race

**TIME** the handling operations in your plant—then compare total handling time with total production time. If handling methods are obsolete, you'll find that handling is wasting much of the time saved by modern production machinery.

Cut the corners on handling operations — Towmotor Fork Lift Trucks and Accessories will do it for you—and you'll increase productive output and come out far ahead in the production race. A Pocket Catalog lists the Towmotor Fork Lift Truck or Accessory that will modernize handling in your plant . . . send for your copy now. Towmotor Corporation, Division 23, 1226 East 152nd Street, Cleveland 10, Ohio.



SEND FOR SPECIAL BULLETINS DESCRIBING THE **TOWMOTOR** REVOLVING CARRIAGE • SIDE SHIFTER UNLOADER • UPENDER • SCOOP • CRANE ARM • EXTENSION FORKS • EXTENSION BACKREST • RAM • OVERHEAD GUARD



# TOWMOTOR

FORK LIFT TRUCKS and TRACTORS

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

When inquiring specify CP 1784 . . . see information request blank, pgs. 2-3

**Another Addition to the  
IRONBOUND FAMILY...the**

**FLO  
TRUK**



**STURDY • VERSATILE  
ECONOMICAL**

The Ironbound FloTruk is a sturdy all-purpose unit. Along with other well-known Ironbound materials handling equipment it will be available from stock. Such inexpensive manpower conserving units can be adapted to meet particular production requirements. Ironbound engineers will be glad to analyze and discuss your materials handling problems with you. Savings up to 40% of your factory payroll can be effected thru proper application of the correct materials handling equipment. Call Ironbound today. Write for illustrated literature.

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IDENTIFIES  
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IRONBOUND  
MATERIALS HANDLING EQUIPMENT

**IRONBOUND**  
BOX & LUMBER COMPANY  
*Materials Handling Division*  
60 HOFFMAN PLACE HILLSIDE, N. J.

**SKIDS • SEMI-LIVE SKIDS  
DOLLIES • FLOOR TRUCKS**

When inquiring specify CP 1785 — see handy form pages 2-3

Page 14

## Materials Handling

### "Accordion" Conveyor Folds, Curves, and Is Portable

100" units telescope to 35", navigate jammed aisles

USES — Flexible gravity conveyor for quick portability and material-handling problems. For use around obstructions, jammed aisles and in close quarters.

FEATURES — Entire unit folds up like an accordion, and may be readily wheeled from one part of plant to another by turning sections upside down, using lower-



Flexible Accordion Conveyor

most roller as a wheel, wheel-barrow-fashion. Highly flexible, extending to desired lengths, also capable of being curved around obstructions. Ends aisle-jamming, saves space, time and labor. Reduces package-handling costs. Versatile. Easily set up, and capable of being formed into practically any shape desired.

DESCRIPTION — May be extended from 35 to 100" per unit. Ruggedly constructed in all sizes. Additional information concerning the Accordion Conveyor will be mailed on request.

FOOD MACHINERY CORPORATION, Dept. CP, Riverside, Calif.

When inquiring specify CP 1786 — see handy form pages 2-3

★

### New Material Handling Machines Introduced in 36-Page Catalog

Manufacturer of material handling machines, both gas and battery powered, presents complete line in a two-color, 36-page catalog, with pictures and descriptive matter. Besides specifications of familiar models of fork lift trucks and Clarkat and Clarktor towing tractors, this literature introduces new "Yardlift" series of pneumatic-tired fork trucks.

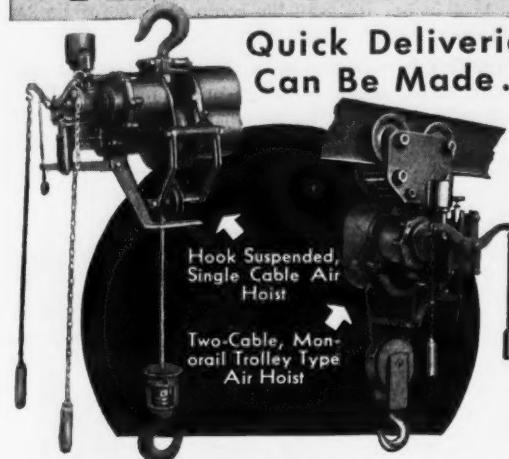
Fork truck handling attachments include the newly-developed "Pul-Pac" for unit loads without pallets, the Schmidgall brick fork, a citrus device for handling fruit and vegetable packages, and other special items. Seven pages of action pictures show fork trucks in operation. Catalog will be mailed on request.

CLARK TRUCTRACTOR, Division of Clark Equipment Company, Dept. CP, Battle Creek, Mich.

When inquiring specify CP 1787 — see handy form pages 2-3

## Detroit AIR HOISTS

Quick Deliveries  
Can Be Made...



They are recommended for paint, chemical, pickling processes; for potentially explosive and other hazardous conditions; also for a wide variety of normal applications.

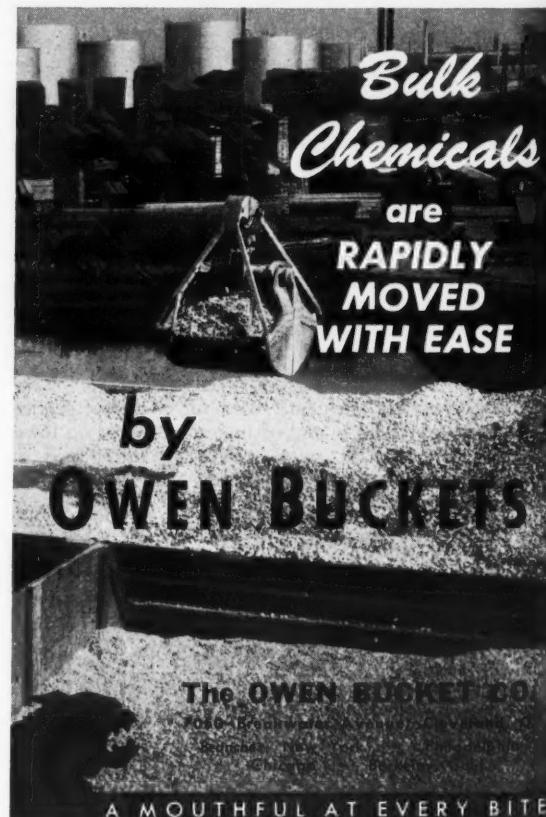
Consult us on the uses and applications for Detroit, Geared Type, Pneumatic Hoists. Ask for Bulletin 700.

**DETROIT HOIST & MACHINE CO.**

8222 MORROW ST.

DETROIT 11, MICH.

When inquiring specify CP 1788 — see handy form pages 2-3



The OWEN BUCKET  
Fork-End Handler  
Rotator  
Gripper  
Grapple

A MOUTHFUL AT EVERY BITE

When inquiring specify CP 1789 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

# BARREL DUMPER

FOR  
HANDLING  
A BARREL,  
DRUM OR  
SKID

An efficient method of lifting and dumping barrels is provided by the Economy barrel dumper. A special cradle and tilting winch holds the barrel at any angle for draining.

Cradle and winch can be detached for skid handling, using the platform arms alone. The Economy line of portable lifters range from 500 lbs. to 5000 lbs. capacity and up to 60 ft. lift. Special equipment engineered. Complete catalog on request.

ECONOMY ENGINEERING CO.

When inquiring specify CP 1790 — see handy form pages 2-3

**The SABIN**  
**ONE MAN**  
**BARRELTRUCK**  
*saves many times more than its cost!*

What was a hard job for two or more men is now an easy job for ONE. With a Sabin Type "L-3" Truck your trucker can easily load and transfer weights up to 800 lbs. He simply places adjustable hook over top chime, then pulls handle back and load is lifted automatically. THIRD-WHEEL FEATURE insures better balance, added safety.

Write for Bulletin No. 45

**THE SABIN MACHINE CO.**

6334 Carnegie Ave. Cleveland 3, Ohio

ALSO TOTE PAN, BOX, CARBOY, KEG TRUCKS!

When inquiring specify CP 1791 — see handy form pages 2-3

JULY, 1947

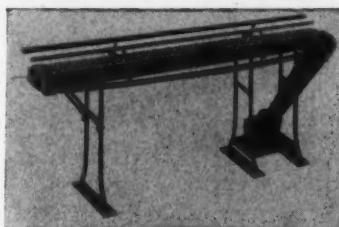
## Materials Handling

Sectionalized Construction Employed in Conveyor Design

Adjustable to handle 1" to 7" wide packages

USES — Table top conveyor is designed to handle cans, bottles, jars, cartons, etc.

FEATURES — Conveyor is sectionalized for convenience in shipping, installing, dismantling, rearranging, lengthening and shortening. A re-



Sectionalized table top conveyor

newable steel liner is provided under the conveyor chain. Adjustable to handle 1" to 7" wide packages.

DESCRIPTION — Built in 5' and 10' sections with a bolt plate to join them. Flat table-top conveyor chain is 3 1/4" or 4 1/2" wide, stainless steel or corrosion-resistant bronze alloy. Rubber or fabric conveyor belting is available for certain applications.

Channel-iron frame and tubular stands are employed. Cut-tooth sprockets and sealed ball bearings are used. Complete information on conveyors and accessories is available on request.

HORNE MACHINERY CO., INC., Dept. CP, 1188 Harrison St., San Francisco 3, Calif.

When inquiring specify CP 1792  
— see handy form pages 2-3

\*

Standard Construction and Custom-made Pallets

Four page folder offers standard construction and custom-made pallets. Pallets may also be built for fourway entry. Data covers assembly, deckboard, stringers, nails, chamfers, etc. Illustrations show the handling of many different products.

GENERAL BOX CO., Dept. CP, 500 N. Dearborn St., Chicago, Ill.

When inquiring specify CP 1793  
— see handy form pages 2-3

# MOVE MATERIALS Economically

UNDER GROUND • OVER HEAD

Short or Long Distances

with **DRACCO**  
PNEUMATIC CONVEYORS



Consult DRACCO Engineers

The FLEXIBILITY of DRACCO Pneumatic Conveyors is what makes it possible to move materials from many points and under unusual conditions that to many seems impossible. In the illustration above the siding was 600 feet from the plant — chemicals were conveyed underground from box car to the fifth floor, economically. If you handle chemicals, grains and granular materials, perhaps DRACCO Engineers can suggest ways of reducing the cost. They have over 30 years experience.

Why not consult them?

For Further Information Write

**DRACCO CORPORATION**

4060 E. 116th St., Cleveland 5, Ohio New York Office: 130 W. 42nd St.

DUST CONTROL EQUIPMENT  
PNEUMATIC CONVEYORS • METAL FABRICATION

When inquiring specify CP 1794 — see handy form pages 2-3

Page 15

## Materials Handling

**"400" BARREL TRUCK  
DELIVERY NOW!**

All steel, electrically welded! For steel drums or wooden barrels up to 1,000 pounds. Loading and unloading is completely automatic. Truck...not the trucker...does the work. Chime hook is adjustable for barrels of different heights. True balance so that "breaking" the load is easy! Weight only 60 pounds. Molded-on, rubber-tired wheels...10 inches by 3 inches.

**HUTTON WHEEL CORP.**  
2120 WALNUT ST. • ST. LOUIS 3, MO.

also manufacturers of Hand Trucks, Platform Trucks, Wheels and Casters.

When inquiring specify CP 1795 — see handy form pages 2-3

YOU CAN WEIGH, COUNT, BATCH, MEASURE, TEST FASTER...MORE ACCURATELY  
...when you do it on a

**KRON SCALE MADE BY YALE**

THERE'S A KRON DIAL SCALE TO FIT YOUR NEEDS  
Send for catalog today, specifying type of scale in which you are interested.

**YALE** THE YALE & TOWNE MANUFACTURING CO.  
4530 Tacony Street Philadelphia 24, Pa.  
ELECTRIC TRUCKS · HAND LIFT TRUCKS · HAND AND ELECTRIC HOISTS

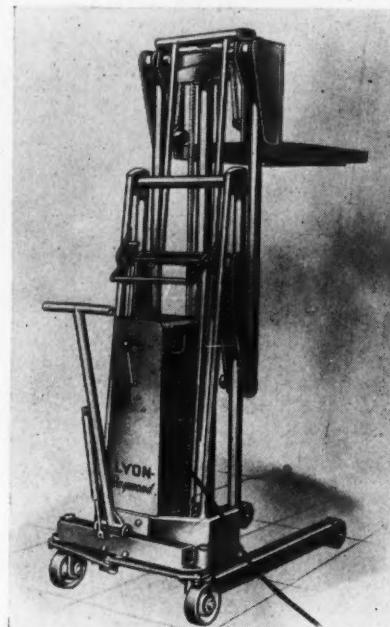
When inquiring specify CP 1796 — see handy form pages 2-3

## Stack, Tier Faster with Power Unit

½ and ¾ hp. hydraulics speed High-Lift truck operations

**USES** — Hydraulic power units for stacking or tiering where speed of elevation is important.

Illustration shows this unit installed on manufacturer's telescopic High-Lift truck, where its increased speed, coupled with the truck's range of elevation, increases total number of lifting operations per working day, saving valuable time.



Power unit and High-Lift truck

**FEATURES** — Constructed so as to prevent overloading. Speeds stacking, tiering operations. Compact, self-contained.

**DESCRIPTION** — Unit consists of electric motor, hydraulic gear type pump, valves, oil reservoir and necessary controls. Available with ½ or ¾ hp. motor, according to truck capacity and required speed of elevation.

Factory-adjusted relief valve in hydraulic system eliminates danger of overloading. Standard equipment includes 25' of conductor cable, with plug. Self-winding cable reels are optional.

Unless otherwise specified, electrical equipment is furnished for use with regular lighting circuit. Additional information furnished on request.

LYON-Raymond CORPORATION, Dept. CP, 2893 Madison St., Greene, N. Y.

When inquiring specify CP 1797 — see handy form pages 2-3

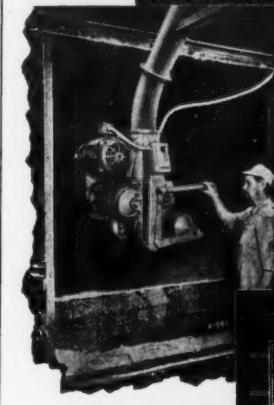
## HAVE YOU A NEW PRODUCT?

Be sure to inform our editors of your new products or of plant problems solved through use of your equipment or materials. All such contributions will receive careful consideration for presentation to the readers of Chemical Processing Preview. Address the Editors.

**CHEMICAL PROCESSING Preview**  
737 N. Michigan Ave., Chicago 11, Ill.

## IT'S A CINCH...

**TO LOAD BOXCARS FASTER  
with an S-A SWIVELoader**



Dry, bulk material (up to 2' size) can be loaded and trimmed mechanically. The centrifugal thrower unit, pivots through 180° inside car door, discharges material to any part of car with only part-time attention of operator. Loading is completed in a fraction of the time and cost required by hand trimming.

*Write for Bulletin No. 1044*

**STEPHENS-S-ADAMSON**

MFG. CO.

Tellevel-Bin Level  
Controls      Car Loaders      Car Pullers      Winches  
Saco Speed Reducers  
SealMaster Ball Bearings

11 RIDGEWAY AVE., AURORA, ILLINOIS

When inquiring specify CP 1798 — see handy form pages 2-3



## Is A Generation Too Long?

Neff & Fry bins serve for a generation with virtually no upkeep expense. If you wouldn't want them to stand that long, they could be dismantled and reconstructed to fit another layout.

Each stave interlocks with six surrounding ones. This makes tight, rigid joints. Steel hoops are stretched around each tier to brace the staves against internal pressure. The bin can be disassembled by removing the hoops and detaching the staves.

The stave is formed under 14 tons' pressure, at least 5000 lbs. to the inch — making it dense, smooth, strong.

Neff & Fry bins are erected by trained crews sent anywhere. Each job is specially engineered. Diameters and heights available as required. Ask for catalog containing full information and photos of installations.

**THE NEFF & FRY CO.**  
CAMDEN, OHIO

**NEFF & FRY STORAGE BINS**

When inquiring specify CP 1799 — see handy form pages 2-3

**CHEMICAL PROCESSING Preview**

The  
Loading  
Time  
**REDUCED**  
To Less  
Than Half

**SIGNODE**

STEEL STRAPPING

2658 N. Western Ave., Chicago 47, Ill.

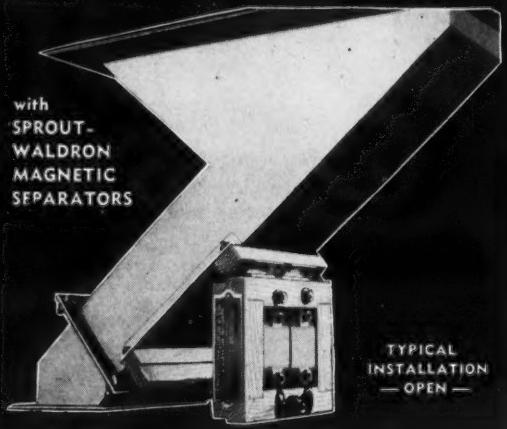
A stop-over car of chemicals (in cartons, barrels and drums) safely secured and **LESS EXPENSIVELY** braced with Signode Steel Strapping. Receivers benefit, too, through ease in removal of bracing and clear segregation of their part of the stop-over car load.

In Carloading  
Or Packaging  
Find Out What  
**SIGNODE**  
Can Do

SIGNODE STEEL STRAPPING CO., CP  
2658 N. Western Ave., Chicago 47, Illinois  
Send complete data on the Signode  
System of Planned Protection.  
 Have representative call     Send literature  
Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

When inquiring specify CP 1800 — see handy form pages 2-3

## LOW COST PROTECTION



### Against

**COSTLY BREAKDOWNS** due to tramp iron in grains, fertilizer, plastics, etc., during milling process.  
**FIRE**, **EXPLOSIONS** caused by sparks resulting from tramp iron coming into contact with cutters, grinders, etc.  
**LAW SUITS** arising from casualties to live stock which have been fed grain from which tramp iron has not been removed.

**SPROUT-WALDRON & COMPANY**

Manufacturing Engineers

MUNCY

PENNSYLVANIA

When inquiring specify CP 1801 — see handy form pages 2-3

JULY, 1947

## Materials Handling

### Casters Have Molded-On Rubber-Tired Wheels

Available in wheel sizes from 4" diameter to 8" diameter

USES — Casters are used in all types of materials handling problems.

FEATURES — Molded-on rubber-tired wheels have light alloy cores, reducing weight of caster consider-



Light-alloy rubber-tired caster

ably. Light weight construction causes wheel to react much quicker to swiveling action of the caster, and promotes faster action and easier rolling.

DESCRIPTION — Swivel and rigid types are made to match in overall height, in wheel sizes from 4" diameter to 8" diameter. Load capacities range from 175 pounds to 530 pounds per caster. Additional information will be supplied on request.

HUTTON WHEEL CORPORATION,  
Dept. CP, 2110 Walnut St., St. Louis 3, Mo.

When inquiring specify CP 1802  
— see handy form pages 2-3

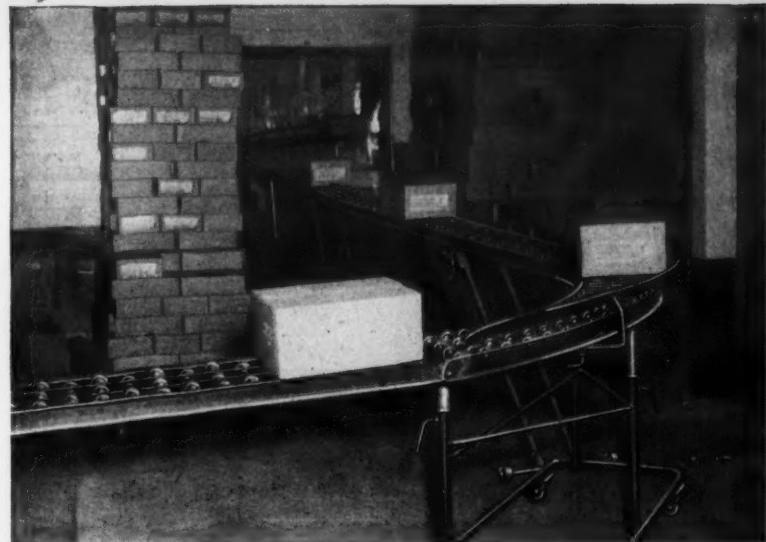
### New Model Diesel Tractors —

#### 43 and 65 HP

Two folders describe the power and work features of two new diesel tractors. The first is of 43 HP (drawbar); the second of 65 HP (drawbar). Specifications and graphic illustrations of physical make-up are included. Copies on request.

CATERPILLAR TRACTOR CO., Dept. CP, Peoria 8, Ohio.

When inquiring specify CP 1803  
— see handy form pages 2-3



## RAPIDS-STANDARD CONVEYORS

*Cut Labor Costs*

\$250.00 PER WEEK

Fast, efficient handling of the cases and empty jars from the time they enter the plant, throughout filling, storage and loading is accomplished at Cinderella Foods, Inc., Dawson, Ga., through the use of a Rapids-Standard Conveyor System.

In the words of Mr. C. M. Cruikshank, Executive Vice-President: "The savings in labor for us is tremendous. I estimate that your gravity track and boosters are saving us from \$200 to \$250 each week. We just couldn't do without them and if no more were available, we wouldn't sell them for five times what they cost."

The Rapid-Wheel Gravity Conveyor and The Stevedore, Jr. (Power Belt) Booster make a handling team in this plant that eliminates all strenuous lifting and hand moving. Cartons placed on the conveyor at the loading dock move on to their destination without re-handling. Stevedore, Jr. does the heavy lifting work and Rapid-Wheel Conveyor carries the cases through the plant by cost-free gravity. Cases move in a minimum of space all the way and traffic problems are non-existent. Both Stevedore, Jr. and Rapid-Wheel Conveyors are easily portable and can be quickly set up in any part of the plant or warehouse.

Check into the advantages of this cost reducing equipment today. What it has done for hundreds of others it can also do for you. **IT COSTS NOTHING TO GET FULL PARTICULARS. WRITE TODAY FOR FREE LITERATURE.**

OFFICES IN PRINCIPAL CITIES



Manufacturers of

STEEL FORGED CASTERS - TRUCKS - CONVEYORS - POWER BOOSTERS

*The Rapids-Standard Co., Inc.*

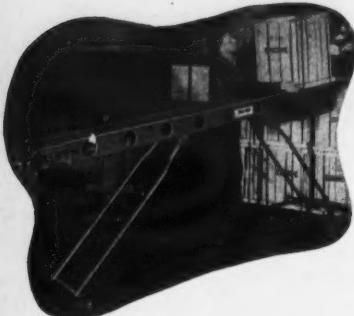
Sales Division—350 Peoples National Bank Bldg., Grand Rapids 2, Mich.

When inquiring specify CP 1804 — see handy form pages 2-3

Page 17

## Another **Tote-All**

Time-Saving, Labor-Saving Conveyor



the light conveyor  
that can take it!

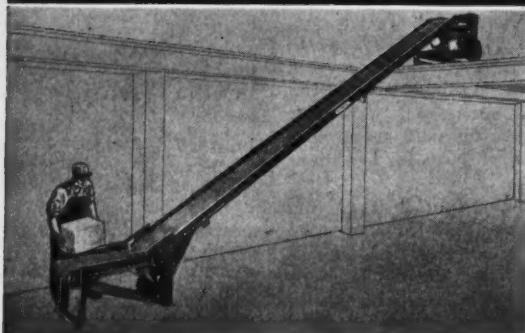
### the new **Tote-All** PACKAGED MATERIAL ZEPHYR

Tote-All does it again! Now a lightweight, portable conveyor for handling boxes, crates, cartons, bags, etc. Saves time and labor costs loading and unloading cars and trucks and stacking in warehouses. Conveyor weighs only 291 lbs. complete with electric motor and under-carriage. Carries 40 lbs. to the foot, distributed load. Operates from ordinary lighting circuit. 10-ft. length . . . 8-in. belt . . . corrosion and abrasion resistant. Either end of conveyor may be raised to 6 ft. height or conveyor may be used horizontally as power booster for gravity conveyors. Write for Bulletin C-12. A product of MATERIAL MOVEMENT INDUSTRIES, 310 S. Michigan Ave., Chicago 4, Ill.

**material movement industries**  
... for lowest cost material handling

When inquiring specify CP 1805 — see handy form pages 2-3

## INCLINEBELT



### For Fast, Continuous Floor to Floor Handling

The standardized Inclinebelt is available in 2 belt widths to meet floor to floor height requirements ranging from 8 feet 4 inches to 14 feet 6 inches. Motor driven and reversible, it lifts or lowers all types of "packages" at the rate of 60 ft. per minute.

For complete details on the new standardized Inclinebelt, write for Bulletin CP-77.

**STANDARD CONVEYOR COMPANY**  
General Offices: North St. Paul 9, Minn.



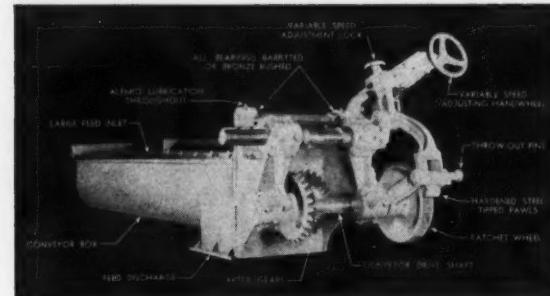
When inquiring specify CP 1806 — see handy form pages 2-3

Page 18

## Materials Handling

### Continuous Stream of Free-Flowing Material Assured by Feeder Drive

Available for a wide variety of capacities, operating speeds and horsepower



Type 2520 variable speed feeder drive

USES — This variable speed feeder drive will handle the extra load and high capacities required by most mouth feed bins.

FEATURES — Use of the unit eliminates troublesome arching and segregation of formula within the bin. An accurate and convenient speed adjusting mechanism provides an even, continuous rate of discharge.

DESCRIPTION — Wide babbitted and bronze bushed bearings seat large diameter drive shafts. Heavy steel-tipped pawls and wide non-slip ratchet wheel are employed. Unit is self-contained, easily installed. It bolts directly to the conveyor box end and requires no intermediate coupling. Additional details are contained in Bulletin EF-146 which is available on request.

SPROUT, WALDRON & COMPANY, Dept. CP, Muncy, Pa.

When inquiring specify CP 1807 — see handy form pages 2-3



### Conveys, Stacks or Handles Boxes, Bags, Small Parts

Portable 1/3, 1/2 and 3/4 hp. belt conveyor has automatic belt tension, 300-600 lb. capacities

USES — Built-in features and special accessories make this portable power belt conveyor useful for many types of handling, stacking, loading and unloading operations, or as a power booster in gravity conveyor lines.

For handling cases, boxes, bags, cartons, other packaged goods. Using a cleated belt and wide metal side pieces for sorting tables, it handles small parts, stampings, scrap parts, bulk material. With wire mesh belt and reduced belt speed, it handles small, hot forgings, permitting them to cool on the belt.

Convertible for stacking packaged goods as high as 10' or more by addition of bolted-on end sections. For loading and unloading trucks, trailers, railroad cars.

FEATURES — Base can be-lengthened both horizontally and vertically. Won't collapse, even though base height lock is released. Driving traction automatically, proportionately increased by any increased load on

"They FIT Where You Need 'Em"



**BUSCHMAN**

### PORTABLE CONVEYORS

When plant operations require changes in conveyor equipment, it's no trick at all with Buschman Portable Conveyors! There is no need to move stands. One stand supports two sections equally. For passage through the line, just pick a section out of the line—easily and quickly. Put it right back—without fuss or trouble. Convenient straight and curved mobile sections are quickly, firmly joined with Buschman "Quick-Eez" couplings. Both Roller and Wheel types have full ball bearings . . . are mounted on swivel castors . . . stands provide adjustable heights. Low in price! Write for detailed Bulletin 10.

Agents in Principal Cities

## THE E. W. BUSCHMAN CO. INC.

Spring Grove and Clifton

Cincinnati 32, Ohio

When inquiring specify CP 1808 — see handy form pages 2-3

### MOVE MATERIALS FASTER AT LOWER COST "The Weld-Bilt Way"

Let a WELD-BILT engineer show you ways to speed up your materials handling methods while reducing your operating costs.

PORTABLE ELEVATORS • HYDRAULIC LIFT TRUCKS • 2 & 4 WHEEL TRUCKS • TIERING MACHINES • BARREL TRUCKS & RACKS

Leading American industries use and endorse WELD-BILT equipment. Write for illustrated folder.

The WELD-BILT Heavy-Duty Hydraulic Lift Truck — 6,000 to 10,000 lb. Capacities.



"Weld-Bilt"  
PRODUCTS

WELD-BILT Portable Electric and Hand-Operated Elevators are designed for a wide range of applications in many styles and sizes.

## WEST BEND EQUIPMENT CORP.

226 WATER ST. WEST BEND, WIS.  
MATERIALS HANDLING ENGINEERS

When inquiring specify CP 1809 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

## How "HAMMOND" Screw-Lift

solved a difficult elevating problem for  
Barton Distilling Co., Bardstown, Kentucky

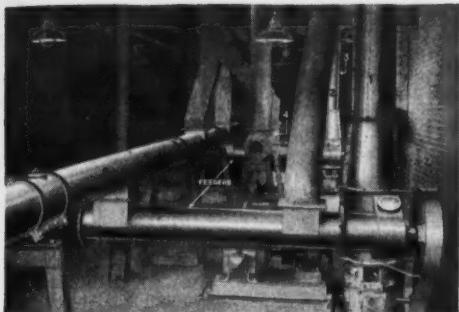


Photo shows spouting coming down from Hammermills, located on floor above, feeding meal to two horizontal 9" Screw-Veysors (Figs. 4 and 5) which distribute it to three 9" Type "D" Screw-Lifts (Figs. 1-2-3). Meal is then elevated approximately 60 feet to another horizontal Screwveyor which carries it to the respective meal storage bins.

The "Hammond" Screw-Lift elevates free-flowing bulk materials to any practical height. Its construction is patented, the result of many years of research to perfect a simple and efficient means of elevating materials that are difficult to handle. There is no possibility of choking, no deflection, no noise. Everything is enclosed — Dust-tight — Moisture-proof — Safe

— Sanitary — Compact — Accessible. Standard units available for capacities of 75, 300, 1000 or 2500 cu. ft. per hour. Drives to suit conditions.

Write for  
Form M-500-2  
illustrating  
available types  
which we may  
arrange to suit  
your conditions,  
and supply  
quotations.

Type "C" Screw-Lift with bottom  
drive. Five other types available.



**Screw Conveyor Corporation**  
699 HOFFMAN ST. HAMMOND, IND.  
ENGINEERS MANUFACTURERS TRADE MARK REG. PROPERTIES PAY OFFICE

When inquiring specify CP 1810 — see handy form pages 2-3

### STRAPPING QUIZ:

Q. Which strapping tool handles  
most sizes of  
strapping?

A. The  
**STEELBINDER**

One Steelbinder Tool accommodates  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{5}{8}$ " and  $\frac{3}{4}$ " strap of any thickness up to .028". Here's how this exclusive Steelbinder advantage keeps your strapping costs down:

- You use light strap for light jobs
- You use heavy strap for heavy jobs only
- You make far better use of strapping salvaged from incoming crates.

Remember, too, Steelbinders "tie a tighter tie" on all shapes, even round... cut off the strap automatically... tie on top or side, with or without a base for resting the tool, a big advantage in maintenance strapping.

write for  
a sample of  
**STUR-D-STRAP**  
For Medium and  
Light Duty Strapping

For  
Heavy  
Duty  
Strapping Use  
**BULKBINDER**  
Strapping Tools

**A.J. Gerrard & Co.**

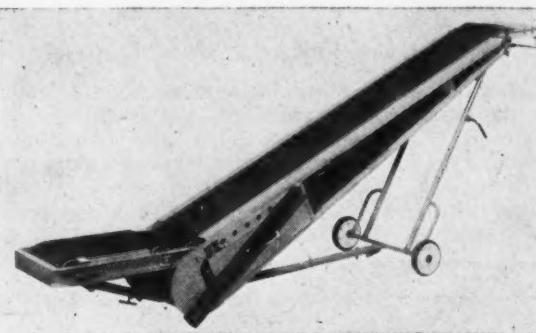
221-Y NORTH LA SALLE STREET, CHICAGO 1, ILL.  
When inquiring specify CP 1811 — see handy form pages 2-3

JULY, 1947

## Materials Handling

carrying belt. Belt cannot slip, regardless of weight. Packages flow smoothly on or off conveyor regardless of operating pitch.

DESCRIPTION — Available in two basic lengths and widths: 6' with 8" belt; 8' with 12" belt. Capacity of



Combination power belt conveyor and stacker

either model, 300 to 600 lbs. distributed load, depending on motor hp. of 1/3, 1/2 or 3/4. Frame is welded steel, utilizing a combination of angular and tubular steel.

Length may be increased by bolted-on extensions of 1, 2, 3 and 4' each. Drive pulley and head (idler) pulley also are bolted in place for quick, simple, removal. Adjustable, telescoping base extends horizontally and vertically. Compression springs within base uprights prevent collapse despite release of base height lock.

Pivoted drive unit contains reduction shafts and standard frame motor. Drive is effected by V-belt from motor to first reduction and chain driven through second and third reductions. Two adjustable compression springs give initial driving traction. Belt speed variable from 40 to 50 fpm. by adjustable pitch motor sheave.

Position of drive pulley, mounted on end of pivoted base, provides automatic adjustment of conveyor belt tension under load. Any weight on belt tends to raise base, swinging drive pulley in arc which tightens belt. Removable troughing side rails, which are standard accessories, facilitate conversion for small parts handling.

ARROW PRODUCTS, INC., Dept. CP, 343 Indiana Ave., N.W., Grand Rapids 4, Mich.

When inquiring specify CP 1812 — see handy form pages 2-3

★

### Selection Tables, Engineering Data Enhance Ball Bearing Catalog

Pertinent engineering information concerning pillow blocks, hangar bearings, flanged, take-up and cylindrical units, as well as steel frame ball bearing take-ups, is presented in a 20-page, file-size bulletin. Literature introduces manufacturer's new line of SC ball bearings.

Two pages of selection tables offer convenient means of selecting the right bearing for any application within the size and load range of the line. Fully tabulated, illustrated and diagrammed. Bulletin A-120 will be mailed on request.

DODGE MANUFACTURING CORPORATION, Dept. CP, Mishawaka, Ind.

When inquiring specify CP 1813 — see handy form pages 2-3

**IF YOUR  
TARGET  
IS  
NET PROFIT**

TRANSPORTATION ISSUE

**CLARK'S  
MODERN METHODS  
AND MACHINES AS  
PRESENTED IN THIS  
NEW ISSUE OF  
"MATERIAL  
HANDLING NEWS"  
WILL HELP YOU TO  
ACHIEVE YOUR  
AIM**

**CLARK TRUCTRACTOR**  
Division of CLARK EQUIPMENT COMPANY

DEPT. A-1 Battle Creek, Michigan

OTHER PLANTS — BUCHANAN, JACKSON, BERRIEN SPRINGS, MICHIGAN

Please send me a copy of the Transportation Issue of "Material Handling News."

NAME \_\_\_\_\_

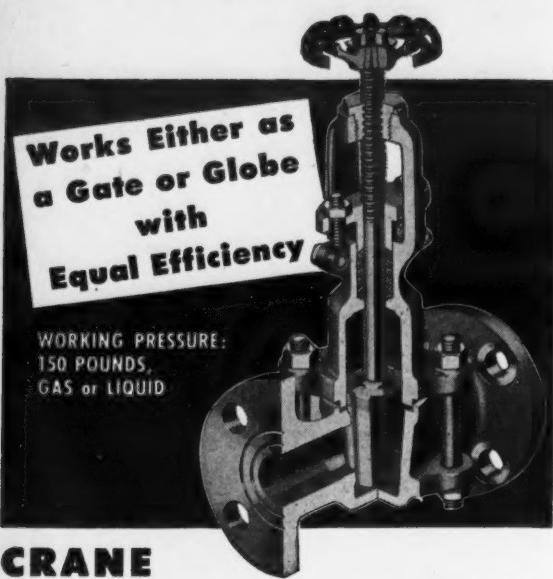
FIRM NAME \_\_\_\_\_

STREET & NUMBER \_\_\_\_\_

CITY & STATE \_\_\_\_\_

When inquiring specify CP 1814 — see handy form pages 2-3

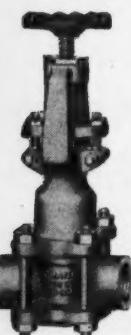
# NEW Double-Duty VALVE



**CRANE**

## ALLOY PLUG GATE DESIGN for Corrosive Services

This new and unique valve principle combines the flow characteristics of conventional gate and globe valve design. In wide open position, flow is straight through, with discharge equal to that of a wedge gate valve. For throttling, Crane Plug Gate design gives precise control of flow at high or low velocities. It resists wire drawing and cutting equally as well as a conventional globe disc valve.



Plug Gate Valve with screwed ends

Made in 18-8 Mo and Monel Metal  
Sizes From  $\frac{1}{2}$  to 2 in.

To permit widest application under corrosive conditions, Plug Gate Valves are regularly furnished in two highly effective alloys. All parts in contact with flow are same as body material. All sizes have outside screw and yoke, bolted bonnet, and are made with flanged or screwed ends.

DESCRIPTIVE CIRCULAR AD 1685 Sent Free on Request

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.  
Branches and Wholesalers Serving All Industrial Areas

EVERYTHING FROM . . .

# CRANE

FOR EVERY PIPING SYSTEM

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

When inquiring specify CP 1815 — see handy form pages 2-3

Page 20

## Briefs . . . from contemporary publications

Here's a quick look at interesting articles appearing in other publications  
... as selected by Technical Editor, H. McCormack

### Problems of Industrial Waste Disposal

Twenty-four authors discuss the waste materials originating in the industries with which they are connected. This series of 117 pages points out the processes in these industries and the resultant waste products. These waste materials being in solution or in suspension in liquid, usually water.

Most of the articles are accompanied by process flow sheets, many of which include the treatment for the wastes.

Sufficient data are supplied to form the basis for the evaluation of the waste treatment employed.

Specific industries represented in the symposium are: Organic and Inorganic Chemicals, Pharmaceutical and Biological Chemicals, Cornstarch Processes, Rubber, Coke and Gas, Beverage Alcohol, General Canning, Citrus Fruit Canning, Packing House, Beet Sugar, and Pulp and Paper. Five pages of bibliography are included which are subdivided as to subject matter. (From "Industrial and Engineering Chemistry" May, 1947.)

### Coordinating Labeling of Plastics

A three page article stresses the need for proper labeling of plastic materials and merchandise. It suggests that labeling should include simple terminology, tell what the product will do, what it will not do. It should also give trade name or name of plastic, present test results and/or guarantee by maker, and give maker's name, address and trade mark, the article states.

Reproductions of molders and fabricators labels are included which provide required desirable information. (From "Modern Plastics" May, 1947).

### Corrosion Licked by Electrical Deaeration

The manner in which the problem of preventing corrosion of boiler feed lines and economizer tubes was solved is outlined in a three page article. Five diagrams and a table illustrate methods used to employ electrical deaeration. Points out test results, plant application of equipment, process operation and operating results. (From "Power" May, 1947)

### Centrifuge Selection

Test methods employed in the selection of centrifuges are outlined in this six page paper. Centrifuges used in chemical processing are listed for batch and continuous operations and as to the type of separation required.

Test data are shown in charts, and six schematic drawings illustrate a number of types of units with manufacturers names. (From "Industrial and Engineering Chemistry" April, 1947).

### Butane Isomerization

Flow sheet, charts and a data sheet are used to illustrate this seven page article. It describes a process for the iso-

merization of butane using aluminum chloride in the presence of hydrogen chloride as a catalyst. (From "Chemical Engineering Progress" May, 1947)

### Sulphuric Acid Concentration

Three of the newer processes for the concentration of sulphuric acid are presented in this twenty-six page article. These processes are: DuPont falling film, "Chemco" drum type concentrator and a vacuum process.

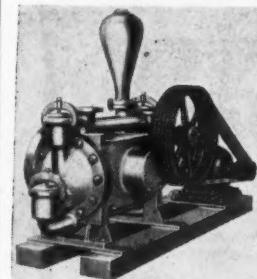
Photographs and sketches of equipment used, flow sheets and data sheets illustrate the article. Necessary construction material are specified. Working concentration of acid stated; from — % to — %. (From "Chemical Engineering Progress" May, 1947).

### Estimating Process Equipment Costs

A series of fifteen articles in this 32 page symposium is devoted to some of the factors involved in estimating plant and process equipment costs.

In this report, which is to be a continuing study of the problems the following elements are discussed: building costs, unit costs of complete plants, plant design for mini-

### For Materials Difficult to Pump



- Less Maintenance
- Simple Operation
- No Contamination
- No Corrosion or Wear
- No Leakage
- Easy Cleaning

of the pump. Double-acting piston, positive pumping delivers required volume with minimum disturbance. No packings — no leakage; easy to clean; modest upkeep. Capacities 1 to 100 G.P.M. pressure to 100 p.s.i. Built of any metal, rubber or plastic lined. Bulletin 121 on request.

**Shriver**  
**DIAPHRAGM PUMPS**

T. SHRIVER & CO., INC., 846 Hamilton Street,  
Harrison, N. J.

When inquiring specify CP 1816 — see handy form pages 2-3

CHEMICAL PROCESSING Previous

mum cost, considerations of industrial site costs, insulation of cold lines and equipment, centrifugal separator costs, ejectors and condensers, complete ammonia plants, freight costs, estimating spray dryers, refrigeration costs and process equipment costs.

Tables, diagrams and graphs are used to illustrate this series. (From "Chemical Engineering" May, 1947)

\*

### Relative Humidity Measurement

Author reviews historical background of humidity measurement and points out existing methods employed. Three pages describe advantages and disadvantages of these methods. Also described is a new method of relative humidity measurement. Illustrated are typical elements used in experimental work in developing the new method. Characteristics of the new element selected are also described. (From "Instruments" April, 1947).

\*

### Favorable Influence of Corn Steep Liquor in Penicillin Production

A ten page article containing eight tables discusses the production of penicillin in culture media containing percentages of corn steep liquor. (From "Archives of Biochemistry" Volume 9, No. 3, April, 1947).

\*

### Cooling Tower Problems

Mechanical draft and atmospheric cooling towers used in cooling water by evaporation are discussed in this four page article. Basic description of each type is included. Basic formulas and typical examples are presented in easily understandable style.

Five problems are worked out to show the effects of various factors. Seven charts illustrate the article. (From "Industry and Power" May, 1947).

\*

### Chemical Products from Natural Gas

A paper which deals with the importance of natural gas as a raw material in chemical synthesis is covered in thirty-six pages. Twelve charts illustrate the paper and show the use of dry and liquified gas for the production of synthetic organic chemicals. (From "Information Circular 7347, U. S. Bureau of Mines" March, 1947).

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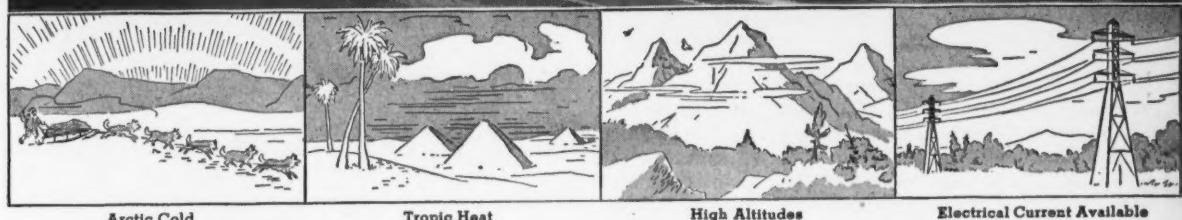
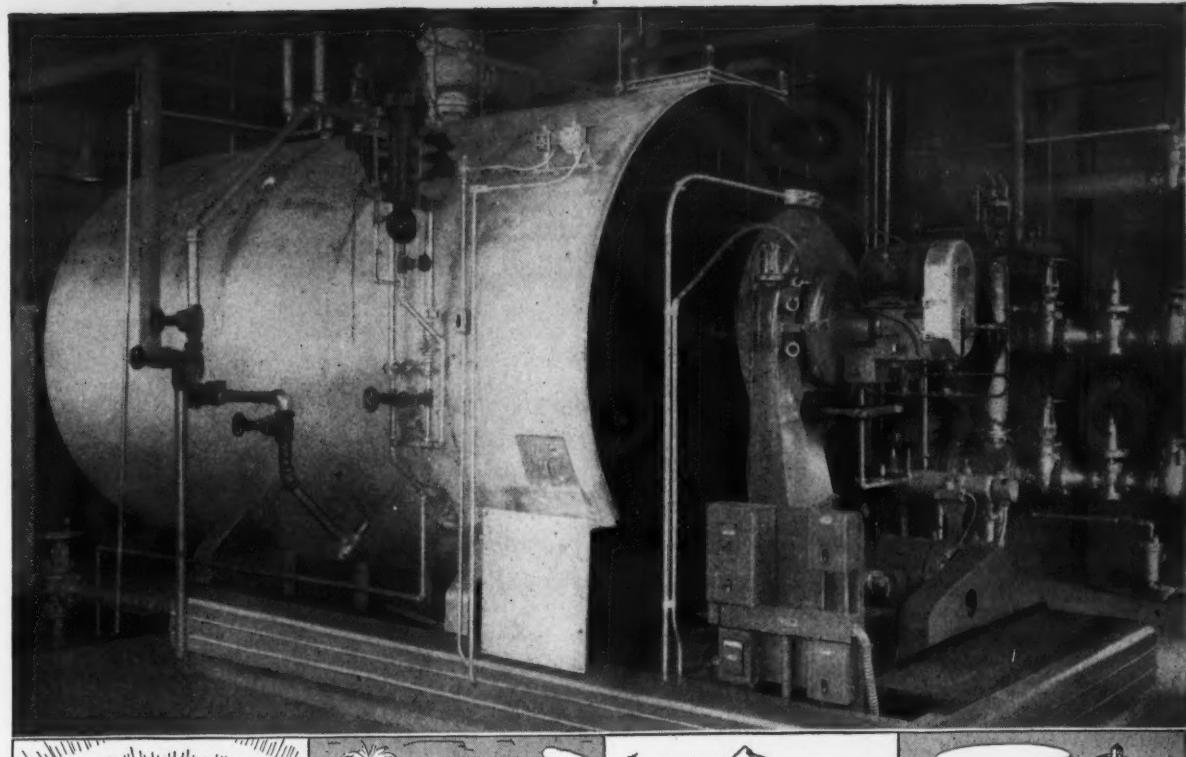
### Neoprene Latex — Its Applications

A discussion of neoprene latices including its characteristics and properties is covered in a seven page article. The uses of this product in making a number of commercial goods are outlined. Suggested applications for these latices are also included. Fourteen figures illustrate the article. (From "Rubber Age" May, 1947)

\*

### Reconditioning Plug Valves

A two page article describes a method for reconditioning plug valves. Three photographs illustrate the procedure involved. Details of the repair process, preparatory work required and methods employed in metal spraying, machining and grinding are included. (From "Power" May, 1947)



## REGARDLESS OF LOCATION . . . Cleaver-Brooks Steam Generators Operate at 80% Efficiency From Full Load Down to 30% of Rating — Assure Low Cost Steam

THE Cleaver-Brooks steam generator is designed to give you 80 per cent guaranteed thermal efficiency regardless of local geographic or climatic conditions. Adaptability of its components provides the wide range of flexibility required to meet varying operating conditions.

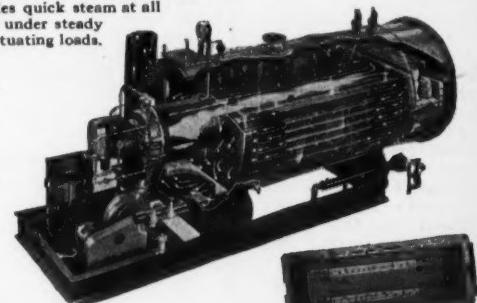
Delivery consists of a "packaged" unit. Connections to service outlets are all that is needed. No smokestack is used—a simple vent carries away all products of combustion. No extra foundation is required. Compact, the unit fits into limited space and low headroom locations. Sizes: 22 models 15 to 500 h.p.; 15 to 200 p.s.i.

*Write for bulletin and complete information*

**CLEAVER-BROOKS COMPANY**

343 E. Keefe Avenue Milwaukee 12, Wisconsin, U. S. A.

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# Cleaver-Brooks

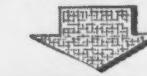
"Packaged" STEAM GENERATORS

HAVE SERVED INDUSTRY FOR MORE THAN FIFTEEN YEARS

When inquiring specify CP 1817 . . . see information request blank, pgs. 2-3

# HOSE, GASKETS, PACKINGS, LININGS, Made from Specialty Rubber

## New Materials



*Resists deterioration by acids, alkalis, oxygen, ozone, and fatty acids. Has high resistance to flexure and gaseous diffusion.*

**USES** — Suggested applications for Butyl rubber in the chemical processing field, based on its physical and chemical properties include; linings for steam and hot water hose lines, conveyor belts for hot materials, hose linings for acid and alkali solution, gasketing materials in pipe lines for chemicals marked E in the accompanying table and diaphragms for controller valves handling hot solutions. Also useful for tank linings where ferric chloride, phosphoric or hydrochloric acid are stored.

**FEATURES** — Properly compounded and vulcanized, Butyl rubber has high percentage elongation at break, high resistance to flexure, long resistance to aging, high resistance to gaseous diffusion, and great chemical resistance to acids, alkalis, oxygen, ozone, and fatty acids. Its resistance to many of the common solvents varies, but in general, it is more resistant than natural rubber.

**DESCRIPTION** — Butyl rubber is formed by the copolymerization of isobutylene and isoprene, both components of gases evolved in petroleum refining. The polymerization process is continuous occurring at very low temperatures in the presence of a catalyst and a diluent. Product forms as minute crumbs suspended in a fluid. The polymer formed has a high degree of saturation, will therefore require a low percentage of sulfur for vulcanization and has a slow rate of cure. Following table compares suitability of natural and Butyl rubber for various contact uses.

SUITABILITY CHART

Fluid	1	2	Fluid	1	2
Acetone	E	E	Ethylene Glycol	E	E
Acids	E	E	Ferric Chloride	P	E
Alcohols			Furfural	E	E
Ethyl	E	E	Gasoline	P	P
Isopropyl	E	E	Glycerine	E	E
Amyl	E	E	N-Heptane	P	P
Benzyl	E	E	Hexane	P	P
Alkalies	E	E	Kerosene	P	P
Aniline	P	E	Linseed Oil	P	E
Animal Oils and Fats	P	E	Mineral Oil	P	G
Benzene	P	P	Naphtha Petroleum	P	P
Butyl Acetate	P	E	Nitrobenzene	G	E
Butane	P	P	Iso Octane	P	P
Carbon Disulfide	P	P	Ozone	P	P
Carbon Tetrachloride	P	P	Phenol	E	E
Chloroform	P	P	Phosphoric Acid	P	E
Cottonseed Oil	P	E	Propane	P	P
M-Cresol	E	E	Toluene	P	P
Dibutyl Phthalate	G	G	Turpentine	P	P
Diethylene Glycol	E	E	Vegetable Oils	P	E
Diocetyl Phthalate	G	G	Xylene	P	P
Ethyl Acetate	G	E	Xylydine	?	E

Key:

1. Natural Rubber

2. GR-I Rubber — (Butyl)

E indicates that the material is excellent for service in this fluid

G indicates that the material is fair to good for service in this fluid

P indicates that the material is poor for service in this fluid

Complete information on Butyl rubber on request.

STANDARD OIL COMPANY OF NEW JERSEY, Dept. CP,  
26 Broadway, New York 4, N. Y.

When inquiring specify CP 1818 — see handy form pages 2-3



Raw Butyl is blended in a rubber mill between revolving cylinders heated to 300 degrees F. to assure constant uniformity

## Nylon Bristles Wear Longer, Resist Abrasion and Chemical Reactions

*Uniformly tapered filaments relieve shortage of natural bristles; offer advantages in manufacture of paint and industrial brushes*

**USES** — Developed during the war to meet the emergency of shortage of natural bristles. The more than a million and a half brushes that were made for military use were a forerunner of their indicated wide use by consumers. Their adaptability in applying a wide range of materials was early indicated by a number of test brushes put into routine service in applying enamels, varnishes, lead, casein, flat wall, primer, sealer and metallic paints on many surfaces including wood, plaster, brick, steel and concrete.

**FEATURES** — Several years of work resulted in development of equipment and technique for spinning nylon filament with a predetermined alteration of taper and for cutting this continuous filament into individual pieces to serve as paint brush bristle. Nylon bristles are extremely tough, wearing longer than hog bristles. They are unusually uniform in length, diameter and ratio of taper. Unaffected by mold, moths or other vermin. Many painters

report that nylon bristles hold their shape indefinitely. Also that they held enough paint and gave a good even coat. There is no indication of brush leaking and they are very easily broken in. Nylon bristles do not require cleaning and other treatment required by natural bristles.

**DESCRIPTION** — The nylon filament is produced in several different lengths, diameters, and taper ratios so that the manufacturer of brushes may select a specified size or make his own mixture of sizes in order to produce a brush to meet given requirements. In any one package the contents are uniform and there is no need for inspection or grading before use.

If it is necessary to shorten tapered nylon filaments in order to make a brush of desired length, the trimming should be done always at the butt end, in order to preserve the carefully designed taper at the tip end. In setting the nylon filaments into the ferrule, consideration must be given to the fact that heating above



Nylon brush (left) has painted 3500 oil drums;  
nylon brush right is new

200° F. may cause the filament to take a permanent set. Hence it is usually best to choose setting compounds which can be cured or vulcanized at a temperature below 200° F. such as a phenol formaldehyde compound or a rubber compound of suitable formulation. The surface of tapered nylon bristles is smoother than that of any hog bristles and this may make the filament behave somewhat differently, particularly in the mixing machine in blending filaments of different sizes.

Brushes made of perfectly straight tapered nylon filaments pick up less paint than does a corresponding brush of hog bristle. Those who prefer to increase the pickup, sometimes even to a greater degree than that achieved by hog bristle brushes mix some crimped nylon filament with the straight. There are differences of opinion as to the best type of crimping and extent of crimping. A standard crimped filament is available.

Nylon tapered filaments are highly resistant to the chemical action of all common paint and varnish ingredients except ethyl alcohol. The only chemicals having a permanent effect are mineral acids, formic acids, phenol and cresols of high acidity.

But consideration must be given to the softening effect of ethyl alcohol, used as a solvent with shellac and certain other finishes. The nylon absorbs ethyl alcohol and its stiffness is thereby temporarily seriously impaired. The brush becomes too soft for satisfactory use. Although ethyl alcohol has no permanent effect, nylon bristle brushes should not be used with finishes containing ethyl alcohol.

If a nylon brush is thus exposed to the softening action of ethyl alcohol it can be restored by removal of the absorbed alcohol. Immerse in boiling water for 30 minutes and dry.

Nylon bristles are also used to advantage in many industrial brushes as they stand up under abrasion and when exposed to strong cleaning solvents, distillate oil, acid solutions for plating. They are used in bottle washing brushes, vat scrub brushes, labeling finishes and many other types.

E. I. DU PONT DE NEMOURS & CO., INC., Dept. CP, (Plastics Department), 626 Schuyler Ave., Arlington, N. J.

When inquiring specify CP 1819 — see handy form pages 2-3

JULY, 1947

# Propyl Gallate

**Propyl gallate is widely employed as a stabilizer for compounds that are subject to autoxidation. It effectively inhibits formation of peroxides in fats, fatty oils, fatty acids, ethers, ascorbic acid, and other substances. Our technical staff is available for consultation on special problems.**

**Examples of Stabilizing Action of PROPYL GALLATE**

		COD LIVER OIL	
Peroxide number after addition of	at start	10 days standing	40 days standing
0.00% propyl gallate	6.7	24.4	100.0
0.05% propyl gallate	6.7	8.0	8.0
0.10% propyl gallate	6.7	8.0	8.0
0.15% propyl gallate	6.7	7.8	7.8
0.20% propyl gallate	6.7	7.7	7.7

		OLEIC ACID	
Peroxide number after addition of	10 days standing		
0.00 % propyl gallate	23.4		
0.025% propyl gallate	6.0		
0.05 % propyl gallate	5.0		
0.075% propyl gallate	2.6		

		ASCORBIC ACID			
Ascorbic acid still present	at start	after 1 day	after 2 days	after 3 days	after 5 days
Nothing added	100%	83.8	52.5	29.4	10.8
0.5% propyl gallate	100%	100.0	93.8	85.5	64.2

**ETHYL ETHER**  
No propyl gallate added—considerable percentage of peroxide present after 20 days' exposure. 0.01-0.025% propyl gallate added—no trace of peroxides after 100 days' exposure.

# HEYDEN

CHEMICAL CORPORATION

393 Seventh Ave., New York 1, N. Y.

CHICAGO OFFICE, 20 North Wacker Drive

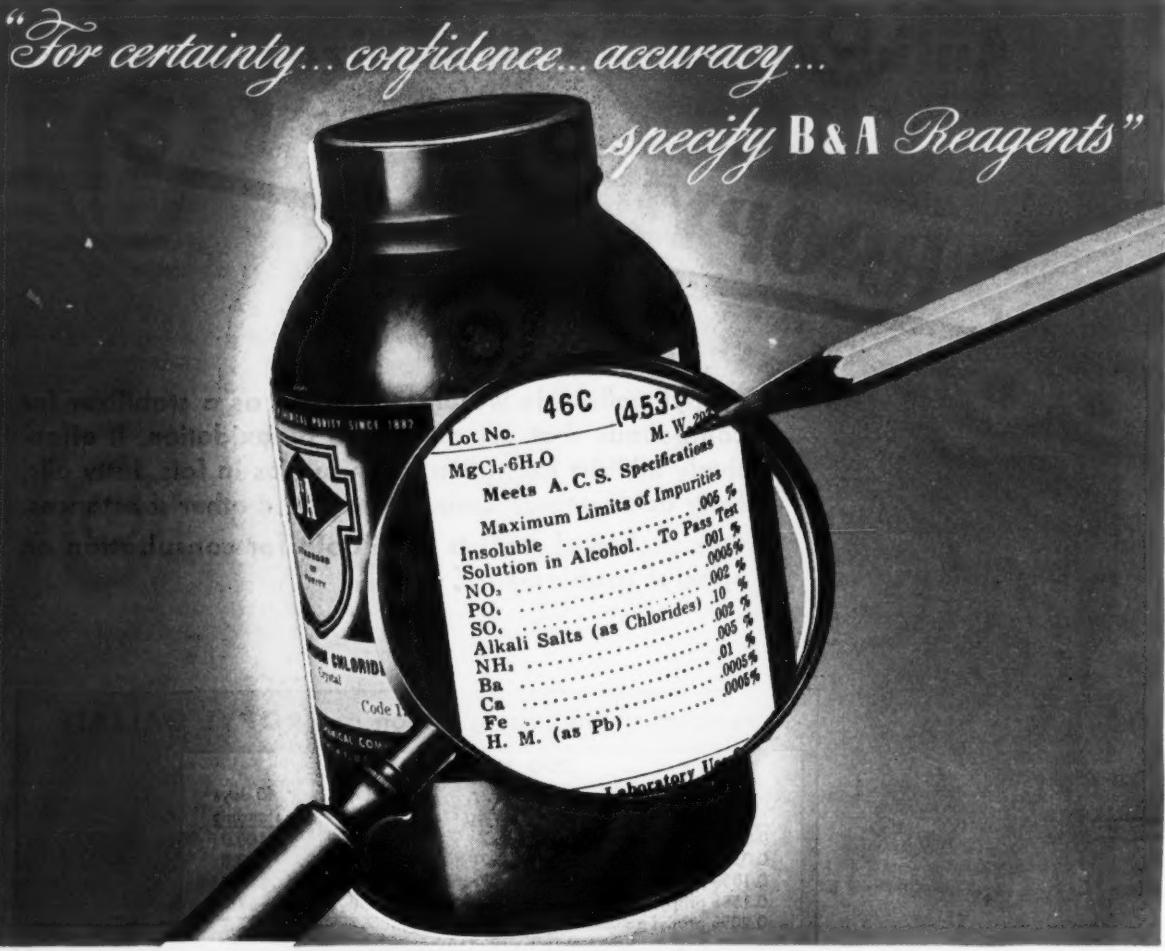
PHILADELPHIA OFFICE, 1700 Walnut Street



NO. 163A47

When inquiring specify CP 1820 . . . see information request blank, pgs. 2-3

Page 23



## FIGURES THAT SPEAK FOR THEMSELVES!

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FINE CHEMICALS

When inquiring specify CP 1821 . . . see information request blank, pgs. 2-3

## Materials

### Adhesive Designed for Bonding Vinyl to Vinyl

Bonded parts handled after 2 hrs., maximum strength obtained in 48 hrs.

**USES** — This specially formulated adhesive has been designed for bonding vinyl to vinyl. Vinyl acetate, butyral, chloride and acetate-chloride sheetings or other stock coated with these materials are described as being bonded with this adhesive. Its use is indicated in the pocket-book and shoe trades where a good amount of synthetic patent leather is vinyl. Rainwear and luggage manufacturers also find many applications of the adhesive in processing coated stocks and fabrics.

**DESCRIPTION** — Known as Resyn Adhesive 2632, the product is a fluid, solvent type of adhesive, ready for use as supplied and suitable for hand application.

NATIONAL STARCH PRODUCTS INC., Dept. CP, 270 Madison Ave., New York, N. Y.

When inquiring specify CP 1822 — see handy form pages 2-3

### Protect Stainless-steel Sheets With Sprayed Coating

Avoids scratching in handling; protects from die marks; easily removed

**USES** — To protect stainless-steel sheets from scratches during storage, handling and shipping. The coating also affords considerable increase in life of drawing dies, and elimination of die-marks.

**DESCRIPTION** — The coating is sprayed on as a final application. Sheets with this protection are generally fabricated and the coating is removed after the final forming. The coating acts as a slight lubricant in forming, and protects from die-marks. The coating, known as "Liquid Envelope" can easily be removed by simply pulling from the sheets.

EASTERN STAINLESS STEEL CORP., Dept. CP, Baltimore 3, Md.

When inquiring specify CP 1823 — see handy form pages 2-3

### Surface Treatment With Amines And Their Acetate Salts

Used to cause surface change phenomena; for use in paint, dye, paper coating plants

**USES** — These Armeens and Armacs, amines produced from fatty acids and their acetate salts, are suggested for use in the following applications: Asphalt bonding, pigment wetting, pigment grinding, static prevention in plastics, silt precipitation, substantive emulsions, compounding in the presence of moisture, in water penetrant and water repellent operations, preventing skinning in paints and in altering flow characteristics in cement and cement paints.

**FEATURES** — Even relatively small quantities of these chemicals are sufficient to cause certain types of water-loving surfaces to become water repellent and oil-loving.

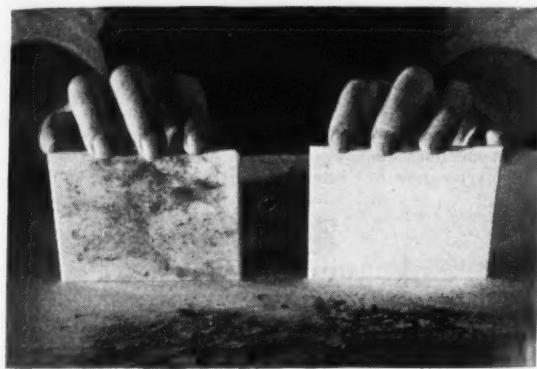
**DESCRIPTION** — The available Armeens and their corresponding Armacs are twenty in number. The latter are made by neutralizing the Armacs with glacial

## Materials

acetic acid. Thus Armeen 12 D becomes Armac 12 D when made into the acetate.

The Armeens have the general formula  $RNH_2$  where the R group stands for the long hydrocarbon chain found in fatty acids. The Armeens are soluble in oil and oil-like materials but are insoluble in water. Both Armeens and Armacs are used to cause surface charge phenomena.

To discuss in more detail some of the applications cited we may consider that of pigment wetting. Inorganic pigments are often made in a water slurry, and the older methods call for drying the pigment before grinding into paint, varnish or printing ink. However, by adding a bit of cationic material such as Armeen C, it is



Polystyrene test tiles show effectiveness of 1% solution of Armac T in preventing pick-up of dust

possible to agitate the water slurry of many inorganic pigments with the oil or thinned varnish and cause the colors to leave the water slurry and become suspended in the oil or varnish.

The same principle can be applied to the other water-to-oil transfer jibs and to other materials than color pigments.

Static electricity is undesirable in various industrial physical processes and on many commercial articles. For example, polystyrene plastic materials will develop a surface charge simply by being handled. Articles so charged will readily pick up dust and lint and become unsightly. To change this static charge and to prevent more of a like charge from being built up, the surface may be wiped or sprayed with a 1% solution of Armac T. If the plastic is to be waxed, an anti-static wax containing 2½% of Armac T may be used.

Charged surfaces treated with Armac T give a discharge through a galvanometer which is opposite to that given by the original untreated charged plastic surface. The surface treated with Armac no longer attracts dust and lint.

The uses for this treatment are relatively unexplored, but it is suggested for trial by the plastics, paper, electrical and other fields where static electricity is undesirable.

In handling amines, the same precautions are used as in handling mild alkalies.

Detailed information on specific applications of these chemicals on request.

ARMOUR & COMPANY (Chemical Div.) Dept. CP, 1355 W. 31 St., Chicago 9, Ill.

When inquiring specify CP 1824 — see handy form pages 2-3

JULY, 1947

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THE Complete LINE

FABRICATED STAINLESS STEEL INDUSTRIAL FITTINGS AND INDUSTRIAL PUMPS

When inquiring specify CP 1825 . . . see information request blank, pgs. 2-3

## B. F. Goodrich Chemical Company

has for sale these GOOD-RITE chemicals

In Commercial Quantities

Phenyl B Naphthyl Amine • Distilled • Commercial

Mixed Mono-and Diheptyl Diphenyl Amines

Isopropoxy Diphenyl Amine

p Hydroxy Diphenyl Amine

N-Nitroso Diphenyl Amine

Diphenyl p Phenylene Diamine

Di B Naphthyl p Phenylene Diamine

Monobenzyl Ether of Hydroquinone

Di Isopropyl Dixanthogen

Mixed Ethyl and Dimethyl Mercaptothiazoles

Mixed Aliphatic Thiazyl Disulfides

Polymerized Trimethyl Dihydro Quinoline

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In Pilot Plant Quantities

Dibenzyl Ether of Hydroquinone

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For additional information please write

**B. F. Goodrich Chemical Company** A DIVISION OF THE B. F. GOODRICH COMPANY  
Department CG-7, Rose Building, Cleveland 15, Ohio

When inquiring specify CP 1826 — see handy form pages 2-3

### NOW AVAILABLE IN COMMERCIAL QUANTITIES

## ACETONITRILE

(Methyl Cyanide)

CH<sub>3</sub>C≡N

A clear colorless liquid distilling without decomposition at 80-82° C.

### MISCIBLE WITH

Cellulose esters  
Collodion  
Fatty Acids  
Acetone  
Benzene

Water  
Ethyl Alcohol  
Ethyl Acetate  
Castor Oil

### IMMISCIBLE WITH

Cellulose Ethers  
Paraffins  
Fatty Acid Glycerides  
Fats

For further information write to:



When inquiring specify CP 1827 — see handy form pages 2-3

## Materials

### Color Coded Diamond Grit In Stick or Tube Form

Either type in handy kits with rollers for application and spreading

USES — For carbide and cutting tools, mirror finishing of any shaped molds and cavities for steel, plastics, glass. Plug gauges, punches, many cylindrical surfaces superfinished; refinishing rolls for all types of foil and sheet from aluminum to silver to steel while in place in mill. Production parts and dies of all types treated to requirements.

FEATURES — This is a new technique for the application of diamond grit to the full range of finishing operations where this medium should be used. It utilizes colored, pre-mixed diamond compounds in stick and tube form. Precision graded diamond grits are provided by scientifically proportioned compounds for instant use. The wasteful mixing of powders and lubricants is eliminated. Color assures instant identification of the right grit size. Each tube or stick and the compounds themselves are identified by color assigned to each grit size. Even the case hardened steel application rollers provided for each stick or tube carry the assigned color.

DESCRIPTION — These compounds are supplied in eight particle sizes from approximately 120 microns to 1 micron. With color, the sequence of finishing stages can be exactly specified.

Eight and six grade kits are available. In general, the eight grade kits provides the complete range for all possible finishing operations. However, the six grade kit is entirely adequate for most plants.

Additional information available on request.

MAGNUS CHEMICAL CO. (Industrial Processing Div.), Dept. CP, Garwood, N. J.

When inquiring specify CP 1828 — see handy form pages 2-3

### Sorbic Acid, New Intermediate — "Upgrades" Drying Oils

Also of interest to synthetic resin, pharmaceutical industries

USES — This diolefinic acid is of interest as a chemical intermediate, particularly in the vegetable oil, synthetic resin and pharmaceutical industries. One of the most promising applications is its use in the "upgrading" or improvement of natural drying oils. Soft oils such as soya, can be improved to attain the properties of linseed. Linseed oil itself can be "upgraded" to the equivalent of tung oil. Tung oil properties are enhanced by sorbic acid treatment.

FEATURES — Sorbic acid undergoes the reactions typical of acids, and the metallic salts, esters, acyl halides, amides, and anilides are easily prepared. In addition to its normal behavior as an acid, it takes part in reactions characteristic of compounds containing a conjugated system of double bonds. The position of the carboxyl group, however, influences the addition of various groups to the diene system and the normal 1 — 4 type of addition does not always take place. Thus, bromination yields primarily 4,5-dibromohexen-2-oic acid, while hydrogen chloride adds to give 5-chlorohexen-3-oic acid. Under proper conditions, the amina-

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Applied without moistening. Adhere to any smooth surface. Never pop off... yet easily peeled off



faster to apply... easy to remove

Magic adhesive backing of revolutionary Kum-Kleen Stickers makes them easier to apply... easy to remove. Simply press them on with finger-tip pressure—no moistening required. Adhere to any smooth surface, including metal, glass, plastic and wood. Never pop off like water-gum stickers nor rip off like string tags... yet peel off easily when their job is done.

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When inquiring specify CP 1829 — see handy form pages 2-3

# waxes

## QUALITY BRAND

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WHITE, YELLOW, BLACK  
Full Range of Melting Points

**CARNAUBA  
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Crude and Refined

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444 MADISON AVENUE, NEW YORK 22**

When inquiring specify CP 1830 — see handy form pages 2-3

## Materials

tion of sorbic acid yields diaminocaprioc amide, which can be hydrolyzed to diaminocaproic acid, an isomer of lysine.

Sorbic acid readily undergoes the Diels-Alder reaction with many substances and in the molten state polymerizes rapidly, presumably by a similar mechanism. Many interesting copolymerizations with other monomers are, therefore, suggested.

**DESCRIPTION** — Sorbic acid,— or 2-4 — hexadienoic acid, is now available in development quantities from this organization. As supplied, it is a white crystalline solid, with a purity of 99 per cent by weight, on a dry basis. The acid as shipped contains a maximum of 10 per cent by weight of water to prevent polymerization on long standing. It melts at 134.5° C., and boils with decomposition at 228° C. Sorbic acid is soluble in many organic solvents and although it is only slightly soluble in water, its alkali salts dissolve readily.

Form 6568, containing additional technical information, is available on request.

CARBIDE & CARBON CHEMICALS CORP., Dept. CP, 30 E. 42nd St., New York 17, N. Y.

When inquiring specify CP 1831 — see handy form pages 2-3

### Modified 18-8 Si Alloy Used In Synthetic Rubber Industry

*Suitable for parts used in dehydrogenation of petroleum fractions*

**USES** — Properties of this silicon alloy indicate its suitability for certain parts of equipment used in the dehydrogenation of petroleum fractions in the synthetic rubber industry.

**FEATURES** — This alloy retains its ductile properties on long heating and is relatively inert chemically under alternating reducing and oxidizing conditions.

**DESCRIPTION** — Known as Croloy 18-8 Si., it is a modified type of 18-8 silicon alloy. It is presently to be used as a substitute to Croloy 27 (27 per cent chromium-iron) in a plant producing butadiene from butane by the dehydrogenation process. Other uses involving greater oxidation resistance or enhanced surface stability are expected. The alloy will undoubtedly give economical performance in comparison with placing ordinary 18-8 alloy in certain types of service.

BABCOCK & WILCOX CO., Dept. CP, 85 Liberty St., New York, N. Y.

When inquiring specify CP 1832 — see handy form pages 2-3

### Nearly 70 Industrial Chemicals Described in 20-Page, Indexed Bulletin

Formulas, descriptions, uses, principal physical and chemical properties and shipping information concerning nearly 70 industrial chemicals are presented in a legible, 20-page bulletin.

Indexed for quick reference, literature includes several new products of this manufacturer, also brief descriptions of chemical processes and facilities available to industry. Request illustrated Bulletin 100.

HOOKER ELECTROCHEMICAL COMPANY, Dept. CP, 15 Forty-Seventh St., Niagara Falls, N. Y.

When inquiring specify CP 1833 — see handy form pages 2-3

JULY, 1947

# VICTOR Chemicals



FOR FIFTY YEARS . . .

In the drilling of oil wells special muds are employed to cool and lubricate the drill bit, prevent cave-ins, hold back tremendous gas pressures and other purposes. Good drill mud must be sufficiently fluid to pump easily, yet capable of building thin, impermeable walls. It should be viscous, yet fluid enough to drop out rock cuttings in the mud pits. To control the viscosity of drill mud, chemicals are usually added . . . sodium phosphates as thickeners, powdered ferrophosphorus to increase weight. Both chemicals are produced by Victor. Other Victor chemicals used in oil well drilling and petroleum refining include: **Alkyl Phosphates** (oil additives, stabilizers for gasoline), **Ferrophosphorus** (weighting drill mud), **Phosphoric Acid** (refining oil and gasoline), **Sodium Acid Pyrophosphate**, **Sodium Tripolyphosphate**, and **Tetrasodium Pyrophosphate** (conditioning drill mud), **Tripotassium Phosphate** (purifying gasoline).

**VICTOR CHEMICAL WORKS** 141 W. Jackson Blvd., Chicago 4, Ill.  
NEW YORK • KANSAS CITY • ST. LOUIS • NASHVILLE • GREENSBORO, N. C.  
Plants: NASHVILLE • MT. PLEASANT, TENN. • CHICAGO HEIGHTS, ILL. • VICTOR, FLA.

VICTOR CHEMICALS FOR EVERYDAY LIVING

When inquiring specify CP 1834 . . . see information request blank, pgs. 2-3

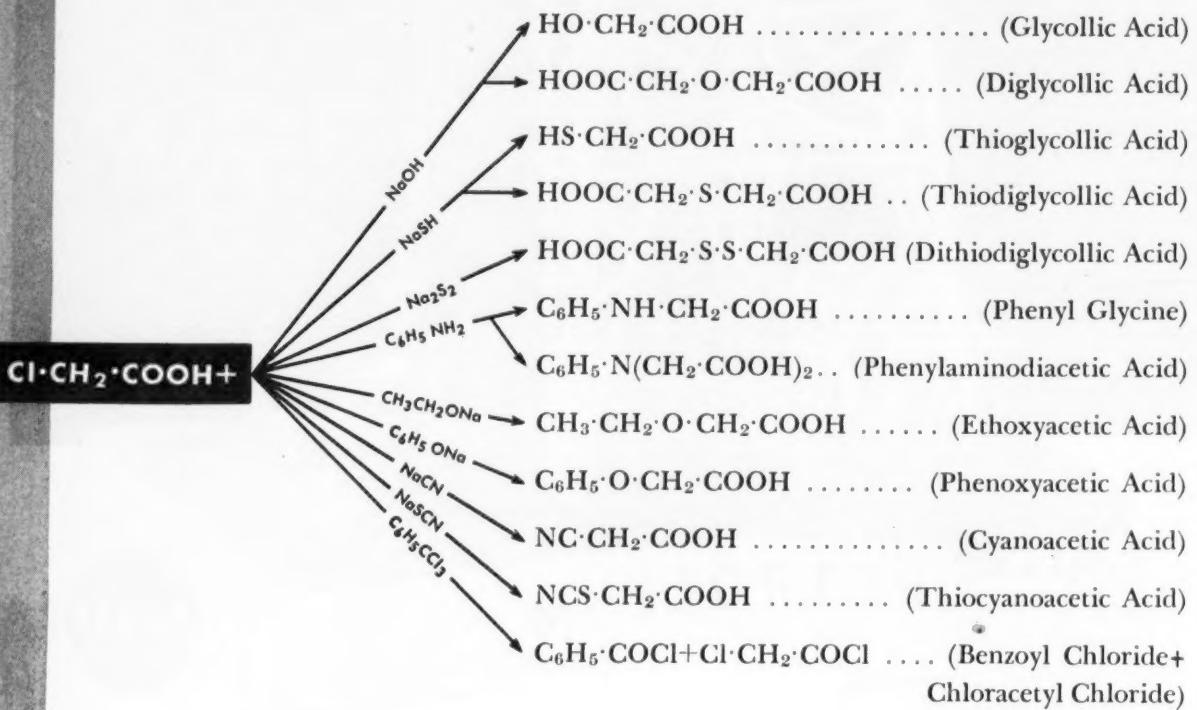
# MONOCHLORACETIC ACID

NOW manufactured by

## HOOKER

Hooker is now in production of Monochloracetic Acid. This important and versatile industrial chemical is being produced as both technical and high grade material.

### SOME TYPICAL REACTIONS OF MONOCHLORACETIC ACID



► Write on your business letterhead for Hooker Technical Data Sheet No. 752 which gives typical data and specifications for both grades of Hooker Monochloracetic Acid.

**HOOKER  
ELECTROCHEMICAL  
COMPANY**

15 Forty-Seventh St., Niagara Falls, N. Y.  
New York, N. Y. Wilmington, Calif. Tacoma, Wash.

Caustic Soda Muriatic Acid Sodium Sulfide Paradichlorbenzene Chlorine Sodium Sulphydrate

When inquiring specify CP 1835 . . . see information request blank, pgs. 2-3

**HOOKER  
CHEMICALS**

### Materials

#### Laminated & Flat Sheet Plastics Reinforced by Fiberglas Mats

Formed of cut lengths of glass textile fibers bonded with a resin

USES — As reinforcements in laminated plastics products and in flat plastics sheets. The mat identified as Code T 36 is made in two types. It is expected that the first of these, T36M, which is bonded with a thermoplastic resin compatible with the polyester laminating resins will be used in place of metals in applications in which frequent design changes are required. Also, where costly metal finishing techniques are employed.

T36K is bonded with a thermosetting resin compatible with phenolic and melamine laminating resins and should find use in the manufacture of reinforced phenolic sheets and formed parts.

FEATURES — Fiberglas Mat-Code T36 is pliable, without fluffiness, and retains the all-important strand integrity of the fibrous bundle. The mat was designed to provide a plastics reinforcing material that, on a strength-weight basis, would provide strength properties higher than those of commonly used aluminum and steel alloys. Also, that on a strength-weight basis would be more economical than most commonly used plastics reinforcing materials and that would help reduce lay-up time and costs.

DESCRIPTION — This new type of mat is formed of cut lengths of glass textile fibers, bonded with a resin. The T36 mat can be heated before impregnation (200 to 225 F.) and preformed to the desired shape. Because the binder is soluble in the polyester laminating resins, the mat can be easily draped in the mold after impregnation, reducing the need for tailoring. Preliminary tests of the Code T36 type mat indicate the following range of strength properties for plastics products reinforced with it: — Tension (psi) 20-23,000; Comp. 20-22,000; Flex. 35, 45,000; Mod. in Flex (XLO<sup>6</sup>) — 1.5 — 1.8; Spec. Gravity 1.55 — 1.55; Impact 20-22 ft. Lbs; Per Cent glass 45-50.

OWENS-CORNING FIBERGLAS CORPORATION, Dept. CP, Toledo, Ohio.

When inquiring specify CP 1836 — see handy form pages 2-3

★

#### Alkali Soda Lignin Has Applications for Plastics, Other Uses, Says Manual

A 12-page manual and handbook suggests uses and applications for Meadol, an alkali soda lignin. Chemistry and chemical derivatives are discussed, and 16 references listed.

Literature states this product may be chlorinated, nitrated, hydrogenated, and will undergo condensation reactions with aniline, fromamide, etc., or form complexes with certain types of proteins.

Suggested applications for plastics, storage batteries, asphalt emulsifications and other things such as flotation agents, grinding aids, adhesives and core binders are taken up. Booklet entitled "Meadol" will be forwarded on request.

THE MEAD CORPORATION, Research & Development Dept., Dept. CP, Chillicothe, O.

When inquiring specify CP 1837 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

## Materials

### General Detergent — Sulphonated Petroleum Derivative

1% solution has pH 7.5 — 8.0

USES — This synthetic detergent is designed for general use. It is effective in both soft and hard water. Being compatible with alkalis such as carbonates, bicarbonates, phosphates and borates, it is of interest in connection with detergent mixtures.

DESCRIPTION — This product, known as Detergent 240, is a sulphonated petroleum derivative, — a dry non-hygroscopic compound available in flake or powder form.

A 1% solution has a pH of 7.5 — 8.0. It is effective as a dispersing agent and penetrant. When foaming properties are desired, Detergent 240 has a high initial foam, which may be stabilized with additions of small amounts of phosphates.

When used alone as a detergent, about 1/2% solution is recommended. Its effectiveness in soft water is said to be equal, pound for pound, to soap. In hard water its detergency value increases. Temperature has practically no effect on Detergent 240.

Shipped in moisture-proof fiber board containers containing approximately 200 pounds.

ARNOLD, HOFFMAN & CO., Dept. CP, Providence, R. I.

When inquiring specify CP 1838  
— see handy form pages 2-3



### Recent Developments in Koroseal Described in Typical Case Histories

28-page illustrated booklet reproduces 26 case history advertisements showing how Koroseal solved production problems. Tanks for pickling steel, conveyor belts for red-hot limestone and oil-resistant hose for carrying lubrication mixture to drilling tools are among the histories cited. Booklet No. 9 will be sent on request.

THE B. F. GOODRICH CO., Dept. CP, Akron, Ohio.

When inquiring specify CP 1839  
— see handy form pages 2-3

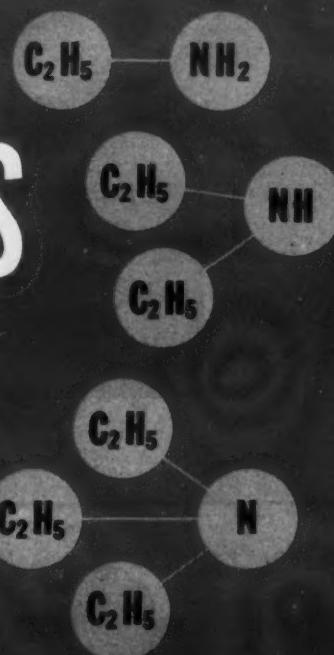
For more information on product at right, specify CP 1840  
— see information request blank between pages 2-3.

DOUBLE CHECKED from RESEARCH to INDUSTRY

SHARPLES

# ETHYLAMINES

- react readily with many types of organic compounds.
- find applications as intermediates and solvents in many fields, including:
- RUBBER      PLASTICS      EMULSIONS
- TEXTILE      PETROLEUM      AGRICULTURE
- are available in commercial quantities.



### FOR SOLUBILIZING 2,4-D

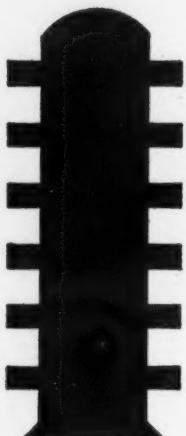
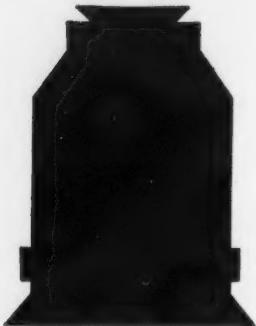
One of the newly developed uses for ethylamines is illustrated by a blend of Triethylamine and Monoethylamine. This new, commercially available blend is an efficient agent for the formulation of 40% solutions of 2,4-D.

We invite your inquiries relating to Ethylamines and other Sharples products.



SHARPLES CHEMICALS INC. PHILADELPHIA • CHICAGO • NEW YORK

# These are the shapes of things to come



## THEY WILL MEAN INCREASED PRODUCTION OF WYANDOTTE CAUSTIC SODA AND SODA ASH

New lime kilns, distillers, carbonators and dozens of other massive units are now being erected at Wyandotte Chemicals Corporation. When completed, they will enable us to produce additional quantities of many industrial chemicals.

But the job cannot be done "overnight."

Practically all the multiple-ton equipment needed must be "tailor-made." Enormous castings must be poured. Heavy machinery placed. In the construction of a single 310-ton, 15-story distiller, tens of thousands of man-hours are required.

Despite continuing shortages of steel and other essential ma-

terials, we are making good progress on our \$25,000,000 plant expansion program.

In the meantime, the available supply of Caustic Soda, Soda Ash and other Wyandotte chemicals is being allocated with the utmost fairness to our regular customers. And we look forward to the day when we can supply more.

**WYANDOTTE CHEMICALS CORPORATION**  
WYANDOTTE, MICHIGAN • OFFICES IN PRINCIPAL CITIES

Soda Ash • Caustic Soda • Bicarbonate of Soda • Calcium Carbonate • Calcium Chloride • Chlorine • Hydrogen • Dry Ice • Glycols  
Ethylene Dichloride • Propylene Dichloride • Chloroethers • Aromatic Sulfonic Acid Derivatives • Other Organic and Inorganic Chemicals

When inquiring specify CP 1841 . . . see information request blank, pgs. 2-3



## Materials

### New Synthetic Rubber Superior for Mechanical Goods

*Affords smoother finish; better retention of embossed design; easy to handle*

**USES** — Improves the appearance and production efficiency of many rubber products such as boots, shoes, caps and articles having a bright, shiny appearance and made in colors and white. It also improves the appearance of tire sidewalls by reducing molding blemishes.

**FEATURES** — Easy to handle; in some cases being easier to process than natural rubber. Better retention of embossed design, resulting in a smoother finish. Also, pieces of rubber cut from patterns shrink much less during fabrication, causing fewer rejects.

**DESCRIPTION** — This new super-processing rubber is closely related to the general purpose synthetic rubber, GR-S. The product obtains its unusual properties from the addition of about one-half of one per cent of a cross-linking agent.

This super processing synthetic will be made in two types, — regular and non-staining. The latter can be used in white or light colored articles since it contains a special non-staining anti-oxidant or preservative.

UNITED STATES RUBBER CO., Dept. CP, Rockefeller Center, New York 20, N. Y.

When inquiring specify CP 1842 — see handy form pages 2-3



### Cosmetic Grade Odorless Lanolin

*Saves essential oils, perfumes; does not darken product*

**USES** — For use in the production of high grade perfumed lipsticks, creams, ointments and lotions, also hair preparations.

**FEATURES** — Contributes to economies in use of essential oils and perfumes. This lanolin is not only odorless but it will not affect eye-appealing color of products in which it is used. Its color is pale.

**DESCRIPTION** — Made especially for cosmetic and allied products. Designed to increase emollient properties, impart a smooth, creamy appearance and promote a homogenous mixture. It will not turn rancid and is highly resistant to heat and sun.

N. I. MALMSTROM & CO., Dept. CP, 147 Lombardy St., Brooklyn 22, N. Y.

When inquiring specify CP 1843 — see handy form pages 2-3



### Electrode Made Especially for Machinable Welds on Cast Iron

*High nickel wire core; heavy extruded coating; 5/32"; 1/8" diameters*

**USES** — For machinable welds and wherever electrodes are to be used on cast iron. Of use in the automotive field for production line repair work and on castings requiring machinable welds.

**FEATURES** — High nickel content imparts free flowing qualities and the resultant deposit is sound; weld and

CHEMICAL PROCESSING Preview

## Materials

fusion zone soft and easy to machine. It withstands hydrostatic pressure and may be used with ease in the downhand, vertical or overhead positions. Multiple pass welds can be made without danger of cracking.

**DESCRIPTION** — This electrode — Number 375 — has a high nickel core wire and a heavy extruded coating. It may be used on either AC or DC and is available in 5/32" and 1/8" diameters. 3/32" and 3/16" diameters may also be added.

AIR REDUCTION SALES CO., Dept. CP, 60 East 42nd St., New York 17, N. Y.

When inquiring specify CP 1844 — see handy form pages 2-3



### Offer Glycol Which Is An Insect Repellant

*High-boiling, non-volatile glycol also readily combined with cosmetic ingredients*

**USES** — Of interest as a raw material for chemical manufacture and as a new ingredient for cosmetics, especially where insect repellency is desired. It may be used in the preparation of new types of emulsifying agents and perfume fixatives.

**FEATURES** — This compound was first manufactured during the war for use as an insect repellent and is known as a civilian product under several brand names. It has been very widely used and no cases of skin irritation or dermatitis have been reported.

This glycol has a viscosity between those of ethylene glycol and glycerol, but it differs from these polyalcohols in its very limited solubility in water. Containing eight carbon atoms, ethylhexanediol is compatible with hydrocarbon-like substances while still retaining the excellent solvent properties of the dihydric alcohols.

**DESCRIPTION** — 2-Ethylhexanediol-1,3 is said to be the first glycol of limited water solubility to be produced on an industrial scale. The commercial material has a faint odor, similar to that of witch hazel. It combines the properties of a mild, readily perfumed odor, a low volatility, and a ready compatibility with the customary ingredients of lotions and creams.

Both its hydroxyl groups can be esterified, although the secondary group is less reactive. Under strenuous conditions, it will dehydrate to the unsaturated compound 2-ethylhexene-201-1.

CARBIDE & CARBON CHEMICALS CORP., Dept. CP, 30 E. 42nd St., New York 17, N. Y.

When inquiring specify CP 1845 — see handy form pages 2-3



### Chemical Resistant Rack Coating Described in 4-page Bulletin

Non-inflammable rack coating with a Saran plastic base is described in 4-page folder. Material can be applied by hand dipping and dries in less than an hour. Other advantages of Pen-Kote 590 are discussed and illustrated in the booklet. Literature is available.

PENINSULAR CHEMICAL PRODUCTS CO., Dept. CP, 6795 East Nine Mile Road, Van Dyke, Michigan.

When inquiring specify CP 1846 — see handy form pages 2-3

JULY, 1947



**Nickel**—valuable catalyst in a host of reactions—is a subject of abundant work in our laboratory.

This effort has developed a new series of nickel catalysts—activated bauxite granules impregnated with oxides of nickel which readily reduce to the metal, and containing promoters such as MgO.

With these catalysts, as always, we give high rank to the contribution of our bauxite carrier. It is pure, rugged, economical—uniformly meshed in a range from 2/4 to 20/60, or special grades when desired.

These facts suggest that, through experience and facilities, we are prepared to undertake production of nickel catalysts to your specification—catalysts that should (1) promote clean-cut reactions, (2) exhibit long life at high activity, and (3) offer 20-50% savings in initial cost.

Write us, outlining details of your present or proposed uses for nickel catalysts. We can go on from there to prove the advantages of Porocel products. Attapulgus Clay Company (Exclusive Sales Agent) Dept. E, 260 South Broad Street, Philadelphia 1, Penna.



ACTIVATED BAUXITES • SUPPORTED CATALYSTS • CATALYST CARRIERS • ADSORBENTS AND DESICCANTS

When inquiring specify CP 1847 . . . see information request blank, pgs. 2-3

## Materials

### Aqueous Zinc Stearate

*Applied with uniformity; no loss; no dust; no fire hazard*

**USES** — For use in the manufacture of cements, neoprene adhesives, coated paper, Butyl rubber, and all types of rubber latex.

It offers a convenient method of applying zinc stearate to molded goods, for it can be diluted with water and sprayed on the molded goods before curing.

**FEATURES** — Because of its water dispersibility, many new applications may be found which the water insolubility of powdered zinc stearate prohibits. Eliminates dust and fire hazard.

**DESCRIPTION** — This product (Aquazinc) is a zinc stearate dispersed in water with the aid of a wetting agent which will volatize at or below the temperature of boiling water. In 55 gallon drums and smaller quantities.

BEACON CO., Dept. CP, 97 Bickford St., Boston, Mass.

When inquiring specify CP 1848  
— see handy form pages 2-3



### Dicyandiamide Reacts With Wide Variety of Reagents

*Typical reaction is with ammonium or amine salts to give guanidine or biguanide salts*

**USES** — Outstanding characteristic is ability to react with a wide variety of reagents. Reaction may occur either with the amino group or the cyano group, or cyclic products may be formed by reaction with both.

Following are only a few of the more well-known reactions of this compound: With ammonium or amine salts to give guanidine or biguanide salts; under a variety of conditions to produce melamine; with aldehydes to form resins.

This chemical has been suggested as having possible applications in many fields: — explosives, fireproofing compounds and dyestuffs.

**FEATURES** — High nitrogen content — 66.67%. Readiness to react with a large variety of compounds.

**DESCRIPTION** — Aero Dicyandiamine is a neutral, stable, non-toxic compound. Because of its nitrogen content it has been of interest to

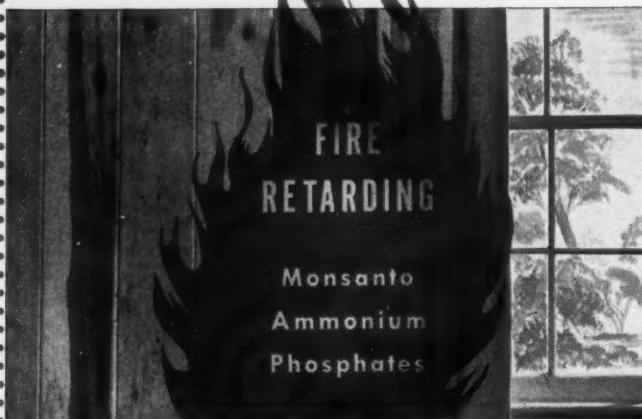
# FOR YOUR INFORMATION



# ATION

## WOOD AND WOOD PRODUCTS

## CELLULOSE FIBER



### Santolites Improve Products and Production

In producing these new sisal-fiber cases, the F. Burkart Manufacturing Company, St. Louis, found that the use of only a small percentage of a Monsanto Santolite\* greatly improved both the product and the fabrication technique — at a lower production cost. These cases are bonded with Monsanto Resinox\* — Santolite was added to impart high gloss, give good flow, rapid curing, easy handling and excellent color. Dyes and pigments also show up brighter when Santolites are used.

Santolites are sulfonamid formaldehyde condensation products available in several types, useful in special applications where good gloss and adhesion are requirements.

\*Reg. U. S. Pat. Off.

### Products of Monsanto Phosphate Division

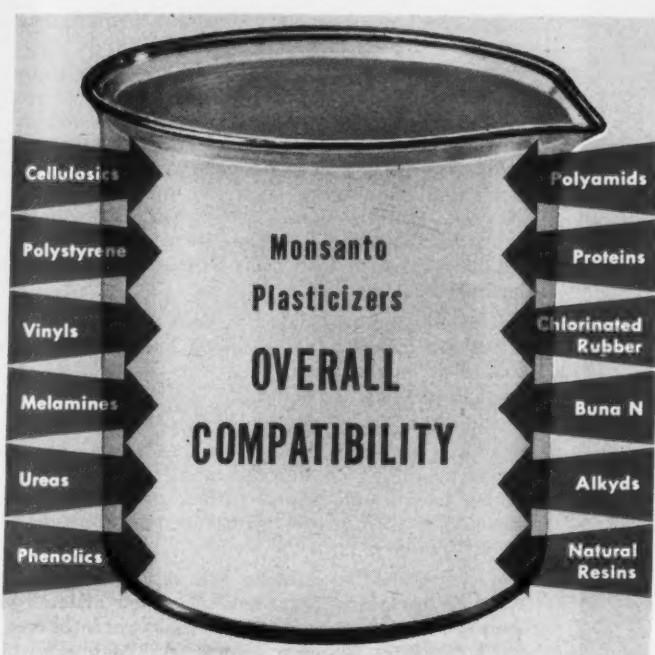
Phosphorus (Yellow)	Mono Calcium Phosphate
Phosphoric Acid	Di Calcium Phosphate
Phosphorus Pentoxide	Tri Calcium Phosphate
Phosphorus Oxychloride	Calcium Pyrophosphate
Phosphorus Trichloride	Ferric Orthophosphate
Tricresyl Phosphate	Sodium Iron Pyrophosphate
Triphenyl Phosphate	Mono Ammonium Phosphate
Mono Sodium Phosphate	Di Ammonium Phosphate
Di Sodium Phosphate	Aluminum Phosphates
Tri Sodium Phosphate	Potassium Phosphates
Sodium Acid Pyrophosphate	Magnesium Phosphates
Tetra Sodium Pyrophosphate	Alkyl Acid Phosphates
Hemi Sodium Phosphate	Alkyl Phosphate Salts
Sodium Poly Phosphates	Special Phosphates
	Ferro Phosphorus

For fire-retarding treatment of lumber, wood and wood products with formulations of Monsanto Ammonium Phosphates, the preferable method for heavy structures is to inject a solution by vacuum-pressure methods designed to yield a predetermined retention. For fiber board, thin wood sections and match splints, the dip method is effective... When the treated product is not exposed to moisture absorption, protection will be lasting. If exposed to ground or to water, protection will gradually decrease as leaching occurs. (Monsanto Fire-Retardant A, which is a neutral mixture of mono- and diammonium phosphates, with wetting agents added, is effective for this application.)

For fire-retarding treatment of cellulosic fibers, such as cotton and rayon, Monsanto's Fire-Retardant B is recommended. It is an especially prepared compound that combines maximum flame-proofness with minimum stiffness, loss of textile strength or yellowing on ironing. A suitable method of application is to saturate the product in a standard (tumbler) wash wheel and wring out excess solution in a centrifugal wringer. The weight of Monsanto's Fire-Retardant B added to the dry-weight fabric should be 15%.

If you are interested in these proved Monsanto fire-retarding chemicals send for Technical Bulletins No. P-29 (Wood) and No. P-28 (Cellulosic Fiber). Write MONSANTO CHEMICAL COMPANY, Phosphate Division, 1704 South Second Street, St. Louis 4, Missouri, or to any Monsanto District Sales Office.

**News of Monsanto Chemicals and Plastics  
for the Process Industries . . . July, 1947**



There is a Monsanto plasticizer that is compatible with almost any resin you may be using — thermoplastic or thermosetting, rigid or elastic, old or new. Additional Monsanto plasticizers, now in process of development, will offer even wider compatibility ranges than heretofore available. Furthermore, laboratory research and field tests being conducted on these new plasticizers already indicate that they will also set new standards of flexibility, volatility, burning rates, heat and light stability, permanence, abrasion resistance, elasticity.

The availability of new Monsanto plasticizers is primarily dependent on basic chemicals now in short supply. This, however, has not retarded Monsanto's research and field-test activities. On the contrary, greater development emphasis is being placed on new plasticizers that can be produced from raw materials that are most likely to be available soonest and in largest quantities.

**SAMPLES AVAILABLE OF  
PRESENT MONSANTO PLASTICIZERS**

Aroclors\* • Dibutyl Phthalate • Diethyl Phthalate • Dimethyl Phthalate • Diphenyl Phthalate • HB-40 • Ortho-Nitrobiphenyl Santicizer\* 1-H • Santicizer 3 • Santicizer 8 • Santicizer 9 Santicizer B-16 • Santicizer E-15 • Santicizer M-17 • Santicizer 140 • Triphenyl Phosphate • Tricresyl Phosphate.

\*Reg. U. S. Pat. Off.



**Improved Lubricants**

Equipped with engine-test laboratory facilities, long experience and a wide range of lubricant additives, Monsanto can help petroleum chemists blend their base oils to achieve any desired degree of product performance . . . Write Monsanto's Petroleum Chemicals Department for information on any of the following additives:

**POUR-POINT DEPRESSANTS**  
... Santopour\* and Santopour B.

**GEAR-LUBRICANT ADDITIVES**  
... Santopoid\* S and Santopoid S-R (Rust Inhibited)

**ANTIOXIDANTS and BEARING-CORROSION INHIBITORS**  
... Santolube\* 31 Santolube 394-C and Santolube 395

**DETERGENTS** . . . Santolube 203-A, Santolube 303-A

**HEAVY and MEDIUM-DUTY ADDITIVES** . . . Santolube 204, Santolube 205, Santolube 206

\*Reg. U. S. Pat. Off.



SERVING INDUSTRY . . . WHICH SERVES MANKIND

MONSANTO CHEMICAL COMPANY, 1704 South Second St., St. Louis 4, Missouri . . . District Sales Offices: New York, Chicago, Boston, Detroit, Cleveland, Cincinnati, Charlotte, Birmingham, Houston, Los Angeles, San Francisco, Seattle. In Canada: Monsanto (Canada) Ltd., Montreal.

**Materials**

scientists for almost a century. It may now be considered as a basic raw material, available in commercial quantities.

It is a white crystalline material; purity 99%; molecular weight 84; solubility Sol. water MeOH, liquid ammonia, Sl. Sol. EtOH, Acetone V. Sl. Sol. Ether, Benzene. Decomp. point 206-207° C.

AMERICAN CYANAMID COMPANY (Synthetic Organic Chemicals Dept.), Dept. CP, 30 Rockefeller Plaza, New York 20, N. Y.

When inquiring specify CP 1849  
— see handy form pages 2-3



**Acid Resistant Neoprene Paint**

No special treatment of surface to be painted necessary

**USES** — As a coating for the protection of surfaces which are subjected to exposure to fats, oils, and greases or corrosive chemical liquids, solids or fumes.

**FEATURES** — Adheres well to wood, metal and other smooth surfaces. Film has no odor. Resists abrasive action; rubber-like, film will not chip or crack. Dries completely in several hours, requiring no oxidation period.

**DESCRIPTION** — A solution of Neoprene in an aromatic solvent with the addition of other materials to yield a chemically resistant paint. Color of the film is translucent amber. The miscible solvents are: — aromatics, ketones, esters, chlorinated hydrocarbons, while diluents include aliphatic hydrocarbons, minerals spirits, turpentine.

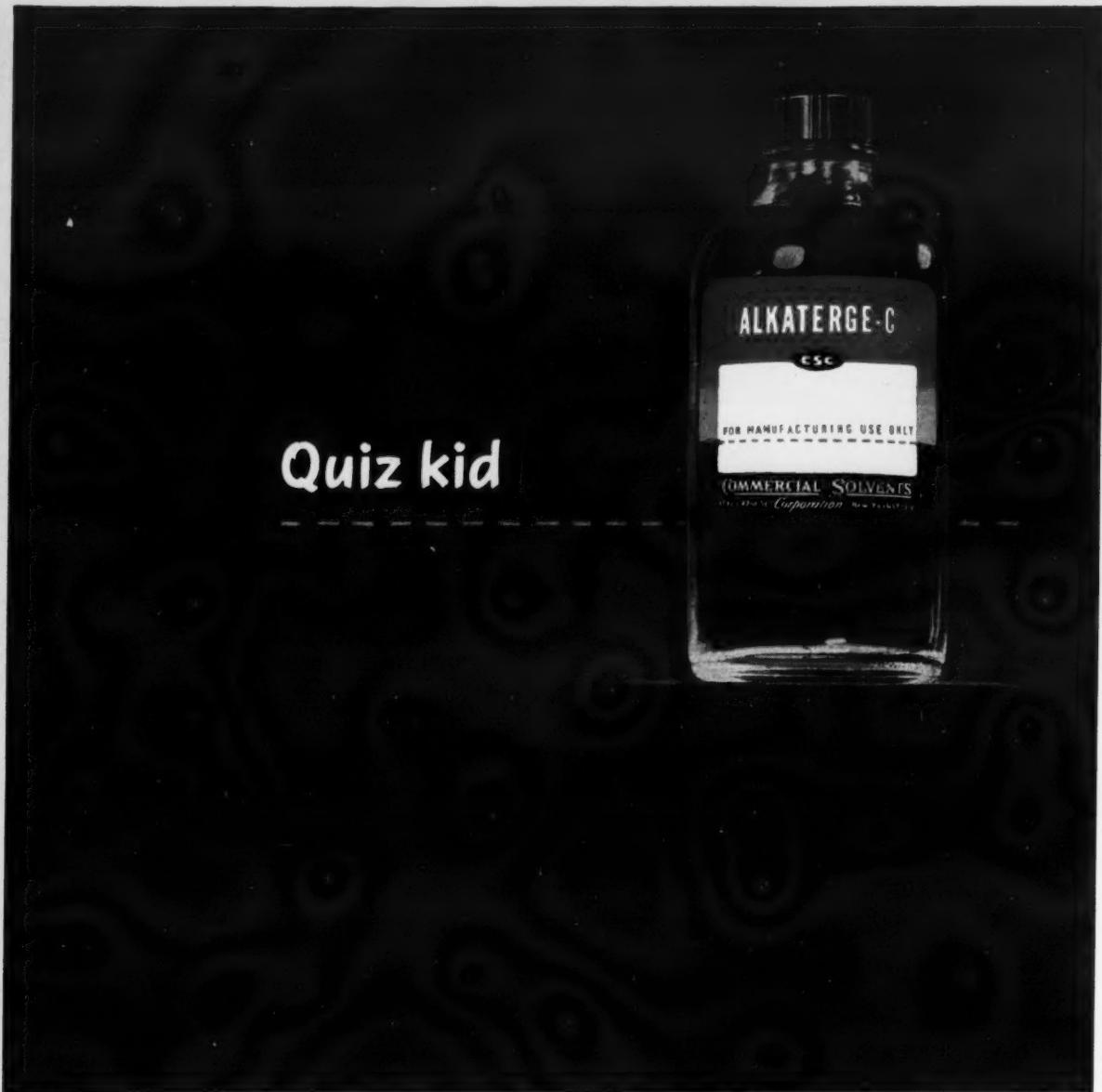
The paint may be flowed from a full brush. A surface free from gaps, ridges, and pinholes will prevent chemical from penetrating beneath the paint and causing localized attacks which may spread to the film.

The paint may be sprayed if properly thinned with toluol or other thinners.

UNION BAY STATE CHEMICAL CO., Dept. CP, 50 Harvard St., Cambridge, Mass.

When inquiring specify CP 1850  
— see handy form pages 2-3

← For more information on product at left, specify CP 1851  
→ . . . see information request blank between pages 2-3.



## Quiz kid

This sample bottle of CSC Alkaterge-C is on its way to answer a question. Somewhere, a manufacturer wants to know if this oil soluble surface-active agent can do a job for him. He will put this chemical specialty through a practical test in his own laboratory. If it solves his problem as promptly as many CSC samples do, it will soon be followed by gallons and drums.



A request for such a sample is frequently the first step in making familiar products better, and new products possible.

**COMMERCIAL SOLVENTS CORPORATION • 17 EAST 42ND STREET, NEW YORK 17, N. Y.**

When inquiring specify CP 1852 . . . see information request blank, pgs. 2-3

## Materials

### Improved Polystyrene Stands Scalding, Boiling

*Excellent moldability in standard injection,  
extrusion machines*

**USES** — Expected to find application in making kitchen utensils, household accessories, radio cabinets, surgical appliances, photographic equipment, musical instruments, drug sundries and lamps.

**FEATURES** — Withstands scalding temperatures and actual boiling for short periods of time. It has excellent moldability in standard injection machines and also operates well in extrusion machines. It offers improved properties in: higher heat resistance, quick setting characteristics and higher strength, improved impact and flexural strength. Quick setting properties of the material usually make it possible to reduce molding cycles in many cases 30% and this without impairment in appearance.

Increased strength makes it possible to mold articles from the material that formerly had to be made with cellulosic compounds.

**DESCRIPTION** — This new polystyrene will be marketed as Lustrex. No modifications are necessary in standard injection and extrusion machines. In some instances molding conditions are the same, but usually it has been found helpful to increase cylinder temperature 25° to 65° F. and to increase ram pressures 100 to 200 pounds per square inch.

It is forecast that Lustrex will replace standard polystyrene in many applications. The new material has an unlimited color range but initially has been offered only in a group of standard colors. ASTM heat distortion point is 190° F. 12,000 — 14,000 psi flexural strength. No effect from weak acids and bases or strong bases. Strong oxidizing acids attack. Soluble in esters, aromatics, higher alcohols and chlorinated hydrocarbons.

**MONSANTO CHEMICAL CO., Dept. CP, Springfield, Mass.**  
When inquiring specify CP 1853 — see handy form pages 2-3

\*

### Super-thin Glass Fabric Veil — Range of 2-1/2 mils Thickness

*One of new series of three fabrics compatible  
with polyesters*

**USES** — These three glass fabrics, each with distinctive features, may be used alone or in combination with other materials as reinforcements for sheet, laminated, or shaped plastic products.

**FEATURES** — Offered in a range of colors and compatible with polyesters and various resins used in plastics reinforcement.

**DESCRIPTION** — The first of this series of three glass fabrics is known as Modigliani Flexible Glass Fabric. This is a firmly bonded, unwoven pliable glass fabric in sheet form. It is useful wherever fiber reinforcement of resins is required.

The Elastic glass fabric, second in this group, is of a specially controlled texture, pliable, with the added property of conformability to random shapes. Its construction resembles conventional elastic. It conforms readily to shapes and is particularly suitable for deep-

## Materials

drawn low pressure laminates. Its apparent unidirectional stretch achieves a multidirectional aspect when fabric of sufficient width is conformed to such a surface as a hemisphere.

The third of these materials, a glass veil, is a refinement of the Flexible Fabric. Of particular interest is its superthin construction in the range of 2½ mils. thickness. It has application as a reinforcing or surface finishing material for other materials used in reinforcement as paper, adding strength, texture and color to the same.

Colors in which all three of these materials are available include white, red, blue, chartreuse, black, orchid, aqua, bright green, brown, bright yellow.

WILMINGTON CHEMICAL CORPORATION, Dept. CP, 10 East 40th St., New York 16, N. Y.

When inquiring specify CP 1854 — see handy form pages 2-3

\*

## Carbide Tool Tips Brazed With Silver Alloy Paste

*Cutting foil to shape; scrap losses eliminated; protection against heat-generated oxides provided*

USES — Developed specifically for brazing carbide tips.

FEATURES — Elimination of cutting silver alloy foil to shape, replacing so it doesn't slip, smearing flux, etc. Also avoided is use of too little or too much flux, silver scrap losses, uneven flow.

DESCRIPTION — This paste makes it easy to braze tips to steel shanks. It consists of a silver brazing alloy finely pulverized and then ground with just the right proportion of a special flux.

The flux contained in this paste begins to melt at 480 degrees F and protects both the carbide tip and the steel joint area with a liquid protective film before the heat-generated oxides can form. The viscosity of the flux is so extremely low that the molten brazing alloy component gently eases all of it out of the joint.

In using this product, the tip is prepared in the usual way and the paste is painted on the joint surfaces of the carbide tip with a small brush. The tip is held in position and heated. "Nu-Braze" Diffusion Paste No. 30 is packed in 5 oz. and 10 oz. jars.

SHERMAN & CO., Dept. CP, 197 Canal St., New York 13, N. Y.

When inquiring specify CP 1855 — see handy form pages 2-3

\*

## Chart Tells What Glue to Use for Each Gluing Job

Required properties of glues for various gluing jobs, with a list of glues recommended for each job, are shown on a handy chart, letterhead-size. Printed in two colors, it covers crack-filler, general joint gluing, etc.

Also gives data for gluing materials other than wood. Four glues are featured, including a durable, waterproof glue for outside work. Literature will be forwarded on request.

CASEIN COMPANY of AMERICA, Division of Borden Company, Dept. CP, 350 Madison Ave., New York 17, N. Y.

When inquiring specify CP 1856 — see handy form pages 2-3

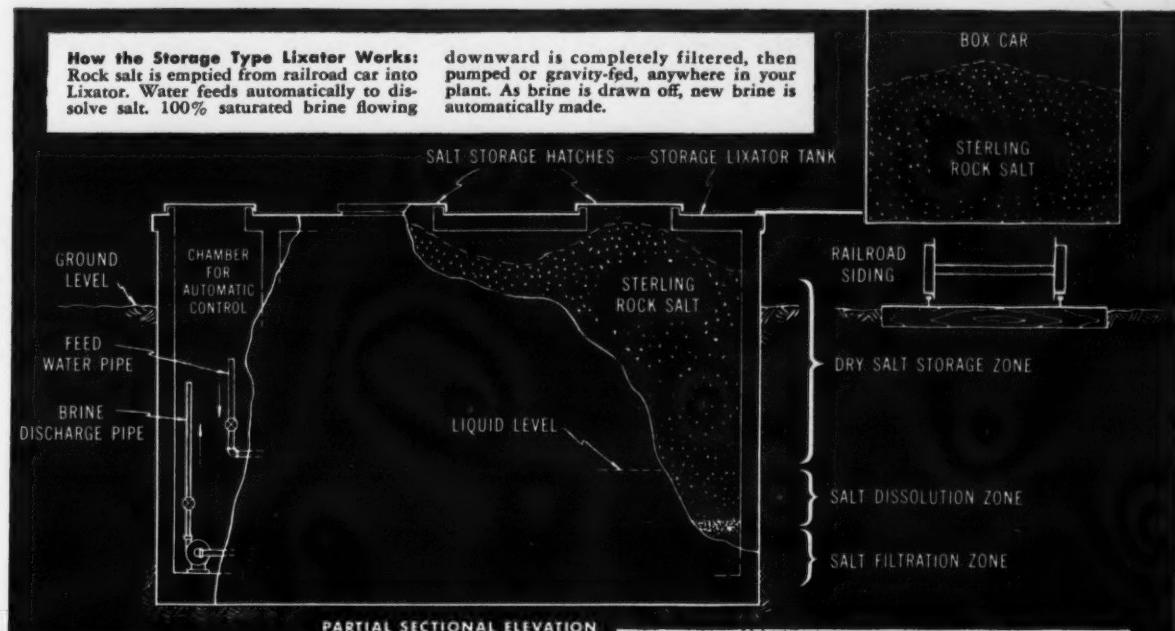
JULY, 1947

# For a Continuous Supply of Clean, Crystal-Clear, 100% Saturated BRINE IN GREAT VOLUME

## The Storage Type Lixator Provides Maximum Savings!

**How the Storage Type Lixator Works:** Rock salt is emptied from railroad car into Lixator. Water feeds automatically to dissolve salt. 100% saturated brine flowing

downward is completely filtered, then pumped or gravity-fed, anywhere in your plant. As brine is drawn off, new brine is automatically made.



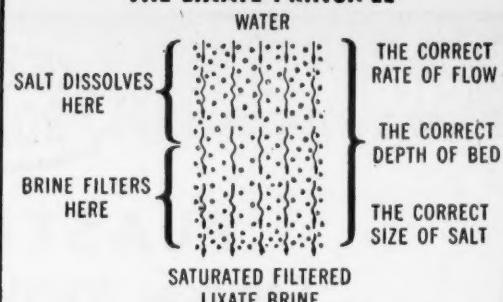
DO YOU USE brine in large quantities? Then we urge you to consider the important economic advantages of the Storage Type Lixator!

It drastically lowers production costs . . . virtually wipes out the costs of handling, storing and measuring salt and of making, distributing and diluting brine . . . uses inexpensive Sterling Rock Salt.

An exclusive development of International Salt Company engineers, the Storage Type Lixator centralizes all salt storage and brine-making operations at one convenient location, and distributes 100% saturated, crystal-clear brine by pipe lines to every point of use in your plant. At any point of use, the brine is quickly and easily diluted as required.

Through its engineering staff, International offers complete engineering counsel on designing and building

### THE LIXATE PRINCIPLE



the Storage Type Lixator to fully meet your specific brine requirements. A representative thoroughly familiar with the uses of brine in your own industrial field will gladly give you complete information. Inquiries are cordially invited.

**The LIXATE Process**  
Reg. U. S. Pat. Off.  
for making brine

INTERNATIONAL SALT COMPANY, INC.  
Scranton, Pa.

When inquiring specify CP 1857 . . . see information request blank, pgs. 2-3



**D. W. HAERING & CO., Inc.**  
GENERAL OFFICES:  
205 West Wacker Drive. Chicago 6, Illinois

When inquiring specify CP 1858 — see handy form pages 2-3

## Materials

### New Watch Spring Alloy Has Many Industrial Possibilities

*Resists all ordinary chemicals, has unusual physical properties; non-magnetic*

**USES** — This new alloy, known as Elgiloy, in addition to its use for watch mainsprings will probably have numerous other industrial applications. A few of these are in the manufacture of razor blades, stainless cutlery, surgical and dental instruments, gun springs, jet propulsion and gas turbine parts, valve parts, chemical equipment, automotive valve springs and parts, and electronic applications.

**FEATURES** — Tests on this alloy show its exceptional resistance to organic acids as represented by the group oleic, acetic, lactic, oxalic and tartaric acids. Also resistance to various salt solutions including mixtures as in artificial perspiration and artificial sea water as well as to solutions of strong bases, such as sodium and ammonium hydroxides.

A wrist watch movement powered by the durapower Elgiloy mainspring was placed in a bath of heated aqua regia. All parts except the spring and the jewel bearings were dissolved in a few minutes. When the liquid cooled an hour later, the mainspring and jewels emerged intact and undamaged.

The spring has also been subjected to a salt spray for 500 hours without rust developing.

**DESCRIPTION** — Elgiloy is an alloy made up of eight

**HIGHLY ADHESIVE**

**DIAMOND CHLOROWAX**  
RESINOUS CHLORINATED PARAFFIN

... gives a highly adhesive quality to interior and exterior paints—varnishes and lacquers—textile coatings—paper coatings—printing inks—glues and adhesives. Compatible with resins, rubbers, vegetable oils and natural waxes. Have you tried it in your formula?

**DIAMOND ALKALI CO., Pittsburgh 22, Pa. and Everywhere**

When inquiring specify CP 1860 — see handy form pages 2-3

**CHEMICAL**

**KESSCO  
PRODUCTS**

**SPECIALTIES**

**PLASTICIZERS**

**Cellulose, Vinyls, Rubber, Resins**

**SOFTENERS**

**Leather, Rubber, Textile, Paper**

**EMULSIFIERS**

**Cosmetics, Foods, Pharmaceuticals,  
Petroleum, Agriculture Insecticides**

**KESSLER CHEMICAL CO., INC.**

ESTABLISHED 1921

STATE ROAD and COTTMAN AVE.

PHILADELPHIA 35, PA.

When inquiring specify CP 1859 . . . see information request blank, pgs. 2-3



**INDUSTRIAL  
NO Drip**

Anyone can brush, trowel or spray NoDrip on any clean, dry surface. Goes on like plaster, forms a seamless, protective coating. **STOPS CONDENSATION DRIP!** NoDrip keeps equipment and floors safe and dry; prevents corrosion of metal and prolongs its life. Acid, alkali and brine resistant. Comes in 1, 5 and 55 gal. drums, ready for use.

**TRY NO DRIP**

Apply NoDrip to a small area, compare the results with uncovered portions.

Send for free NoDrip Handbook

**J. W. MORTELL CO. 530 Burch St., Kankakee, Illinois**

When inquiring specify CP 1861 — see handy form pages 2-3

## Materials

elements — cobalt, chromium, nickel, molybdenum, manganese, iron, beryllium and carbon. At present it costs 10 to 20 times as much as carbon steel.

An important innovation in the durapower mainspring is the welded brace assembly. Tests show that the welded brace is several times that of the conventional assembly.

The outstanding properties of the durapower mainspring include; (1) its 100 per cent resistance to rust, (2) its resistance to all ordinary chemicals, (3) its ability to function without setting, (4) its ability to deliver constant power over long periods of time, (5) its non-magnetic properties, (6) its superior physical qualities. Samples in limited quantities are available.

ELGIN NATIONAL WATCH CO., Dept. CP, Elgin, Ill.

When inquiring specify CP 1862 — see handy form pages 2-3



### High Styrene Content Copolymer for Mechanical Rubber Goods

*Special Buna S type rubber resin in clean, dustless granule form*

USES — For compounding natural and synthetic rubbers. A hard, tough material, this copolymer imparts these same qualities to its compounds. It is employed in molded mechanical goods, durable light colored flooring and other products such as molded housewares, leatherlike soles, heels, etc.

FEATURES — Low specific gravity, light color, compatibility with a range of other hydrocarbons; resistance to aging, chemicals and oils. This rubber resin has an unusually high styrene content.

DESCRIPTION — Darex Copolymer X-34 is a special Buna S type rubber resin. Chemically, it has a higher degree of saturation than ordinary rubbers, but it can be vulcanized alone, and is of course readily vulcanized in compounds.

Made by emulsion polymerization under closely controlled conditions, Darex Copolymer X-34 latex is stabilized with 2% Stalite antioxidant and is alum coagulated to give fine granules of uniform size.

After careful washing and drying, it is packaged as clean, dustless granules in 50 lb. bags. Manufacturing and shipping specifications include tests for color, plasticity, moisture content and ash. It is odorless and tasteless.

Since it is somewhat thermoplastic in nature it can be processed readily on an open mill or an internal mixer. Also, it has a low volume cost and its use contributes to conserving such materials as titanium dioxide, shellac and zinc oxide in light colored stocks with savings in compound costs.

It may be used in low cost compounds. Where pigments like carbon black, clay and zinc oxide are used in large amounts addition of 5 or 10 parts of Darex Copolymer X-34 is suggested. In high quality compounds larger proportions are used.

Additional information concerning properties, processing procedures and applications on request.

DEWEY & ALMY CHEMICAL CO., Dept. CP, Cambridge 40, Mass.

When inquiring specify CP 1863 — see handy form pages 2-3

JULY, 1947

**TURN FIRST TO PFIZER  
FOR GLUCONATES**



**PFIZER SODIUM GLUCONATE**  
 $\text{NaC}_6\text{H}_{11}\text{O}_7$   
Molecular weight 218.13  
White crystalline product  
Soluble in water

**PFIZER CALCIUM GLUCONATE**  
 $\text{CaC}_6\text{H}_{11}\text{O}_7 \cdot \text{H}_2\text{O}$   
Molecular weight 448.27  
White crystalline salt  
Solubility in cold water:  
3 grams per 100 cc of water  
Readily soluble at high temperatures

**PFIZER COPPER GLUCONATE**  
 $\text{Cu}(\text{C}_6\text{H}_{11}\text{O}_7)_2$   
Blue crystalline powder

**PFIZER FERROUS GLUCONATE**  
 $\text{Fe}(\text{C}_6\text{H}_{11}\text{O}_7)_2 \cdot \text{H}_2\text{O}$   
Brownish yellow powder

**PFIZER** Manufacturing Chemists Since 1849

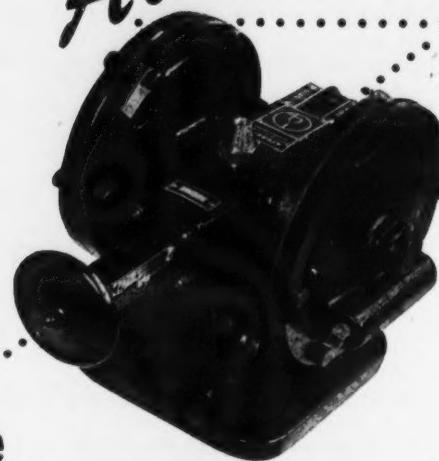
**PFIZER QUALITY**

When inquiring specify CP 1864 . . . see information request blank, pgs. 2-3

**FOR CONTINUOUS  
AUTOMATIC PROPORTIONING**

**with**

*Maximum  
Accuracy*



## The Askania Ratio Regulator

A simple, accurate way of mixing two or more liquids or gases to a predetermined ratio. Ratio can be changed easily without interruption of the process.

The Askania Ratio Regulator has only a few moving parts reducing maintenance to a minimum.

Low pressure systems use Fiberglas Diaphragms, measuring changes in conditions as small as .0025" W. C.

Turn down range of 10 to 1, with accuracy across full range.

For control of fuel/air mixtures, for mixing propane-butane and natural gas, for processing change from batch to continuous mixing... for proportioning two or more gases, liquids, or gases with liquids... use the Askania Ratio Regulator.

For detailed data get Technical Bulletin No. 101.

**ASKANIA** Controls

**ASKANIA REGULATOR CO.**

*"A Subsidiary of General Precision Equipment Corporation"*

**246 EAST ONTARIO STREET, CHICAGO 11, ILLINOIS**

Export Office for Latin America: 44 Whitehall Street, New York, N.Y.

When inquiring specify CP 1865 — see handy form pages 2-3

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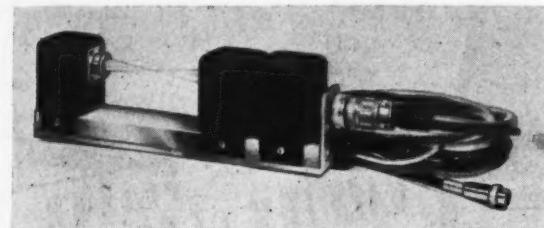
## Instruments

### Photoelectric Actuator Counts Objects as Small as Ten Thousandths of an Inch

*Actuator has a beam approximately 1/16" wide and responds to changes in light level as small as 20%*

**USES** — This photoelectric actuator is used in combination with the manufacturer's predetermined electronic counter. It is designed especially for the counting of pills, buttons, watch screws, bottle caps and other irregular shaped articles.

**FEATURES** — Permits accurate counting of small size, light weight or irregular shaped articles. Actuator has a beam of approximately 1/16" wide and will respond to changes in light level as small as 20%. Since com-



Model 600 photoelectric actuator

plete interruption of the light beam is not required for normal operation, objects as small as ten thousandths of an inch have been counted with absolute accuracy. This also permits the counting of objects which do not have a distinct separation.

**DESCRIPTION** — The actuator provides the negative pulses required for operation of the company's electronic counter, and is designed to detect objects at rates up to 30,000 per minute. Unit also contains a capacitor discharge output circuit for the high speed operation of control solenoids such as required for deflector gates and packaging equipment.

Electronic counters of various capacities, predetermined features and output circuits are also available for operation with this actuator.

Additional information on counting, timing and control problems may be secured on request.

POTTER INSTRUMENT COMPANY, Dept. CP, 136-56 Roosevelt Ave., Flushing, N.Y.

When inquiring specify CP 1866 — see handy form pages 2-3

\*

### Detector Checks Leaks in Vacuum Systems During Operation

*Leaks as small as .006" of water show a 1/8" deflection of the needle on the scale*

**USES** — Instrument is used to detect and locate leaks in vacuum systems.

**FEATURES** — Complicated devices and procedures are not necessary when this device is used. It eliminates the

need for shutting down vacuum systems in order to detect a leak. May be used by unskilled help.

Manufacturer claims that the instrument is extremely sensitive, registering a leak as small as the equivalent of .006"



Portable battery operated vacuum leak detector

water, which causes a 1/8" deflection of the needle on the scale. Instrument can be used equally well in the detection

**YOUR INDEX  
TO PROCESS  
EFFICIENCY  
with our  
compliments**



This is our new, general catalog W1800, "Specification Index for Bristol Automatic Controlling, Recording and Indicating Instruments." It contains 24 pages of condensed information telling how Bristol instruments promote efficiency in industrial processes. Illustrations show basic methods of applying various types of instruments. If you use, or contemplate using instruments, we'll gladly send you a copy without obligation.

**THE BRISTOL COMPANY**

\* 141 Bristol Road, Waterbury 91, Connecticut

When inquiring specify CP 1867 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

tion of leaks when checking welded seams or joints on equipment under pressure.

**DESCRIPTION** — Equipment consists essentially of a heated wire, housed in a metal chamber, which is a part of Wheatstone bridge circuit. When a vacuum is pulled on the chamber, the filament becomes slightly chilled, upsetting the balance of the Wheatstone Bridge and causing a needle to rise on the scale of the meter.

Instrument is furnished with a short tube having a rubber suction cup on the end to be applied at the point of detection. This tube is connected to the instrument and when the rubber suction cup covers a leak, the needle on the meter rises. The face of the meter is  $2\frac{1}{4}$ " in diameter with a scale having large easily read figures.

The unit is portable, battery operated, and is housed in a steel case measuring  $3\frac{1}{4}$ " x  $4\frac{1}{2}$ " x  $7\frac{1}{2}$ ". For convenience in carrying, an adjustable shoulder strap is furnished with snap hooks that may be fastened to the sides of the instrument. Additional details will be supplied on request.

DAVIS EMERGENCY EQUIPMENT COMPANY, Dept. CP, 56 Halleck St., Newark 4, N. J.

When inquiring specify CP 1868 — see handy form pages 2-3



### Draft Gauge Useful for "Spot" Test or Permanent Installation

*Large area diaphragm enclosed in metal housing assures sustained accuracy*



Model MZF draft gauge

**USES** — Instrument may be used to check draft conditions. Can be used for readings at the point of draft measurement or placed any distance away from the test point.

**FEATURES** — Unit can be quickly and easily mounted on a panel, or if desired hung on a wall or simply set on any flat surface. A large area diaphragm enclosed in a metal housing assures sustained accuracy and trouble-free service. A distinctive 3"

wide scale can be read accurately and easily even in dim light.

**DESCRIPTION** — Range—0.5" to—.25" water. Unit is self-contained in a metal case  $4\frac{3}{4}$ " wide x  $7\frac{1}{2}$ " high x 3" deep. Zero adjustment can be made without removing any parts. Gauge is supplied with 9 feet of rubber tubing and a 5 inch sampling tube. Leaflet 719 on the model MZF draft gauge may be secured on request.

BACHARACH INDUSTRIAL INSTRUMENT COMPANY, Dept. CP, 7000 Bennett St., Pittsburgh 8, Pa.

When inquiring specify CP 1869 — see handy form pages 2-3



TRAPS AND AFTERCOOLERS

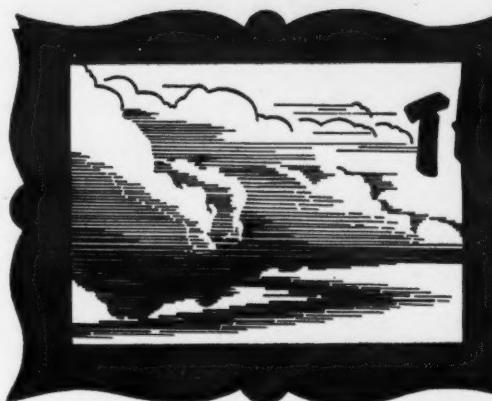
WON'T STOP AIR-LINE CORROSION

INSTRUMENT MAINTENANCE

IS RUNNING HIGH (ORIFICE TROUBLE)

AIR-MOTOR DIAPHRAGMS

DETERIORATE TOO RAPIDLY



a KEMP dynamic desiccating dryer  
will get both water and water vapor

If the compressed air you use for so many purposes were dry—really dry—you wouldn't have to worry so much about equipment corrosion, line freezing, contamination of product, clogging of orifices, deterioration of diaphragms, lubricant-loss in air tools, and such. But it isn't! The mere removal of water (with traps or aftercoolers) doesn't remove water vapor.

And that's where KEMP desiccation comes in. A KEMP dryer gets both the water and water vapor out of the air, as it passes through generous activated-gel towers.

Compressed air is too valuable a tool in the chemical industries when dry and clean to allow to become a nuisance through moisture and dirt.

Let us help you do something about it.



#### REALLY DRY—TO $30^{\circ}\text{F}$ DEW POINT

... for the protection of pneumatic instruments, valves and tools—however long the air line or cold its environment. The duty of this model is 100 cu. ft. per minute (free air) entering at  $70^{\circ}\text{F}$  and pressures up to 80 p.s.i. A simple throw of the lever, and set of the timer, starts automatic reactivation (by steam) without interrupting air flow. Economical, simple, and effective—all the way to  $-30^{\circ}\text{F}$  dew point.



PRECISION CARBURETION & ADAPTED COMBUSTION FOR INDUSTRY'S HEAT-USING PROCESSES

ATMOSPHERE GENERATION & ABSORPTIVE DRYER SYSTEMS FOR PROCESS CONTROL AND PROTECTION

JMLeo E-G1 cp  
THE C. M. KEMP MFG. CO.  
405 E. Oliver Street, Baltimore 2, Md.

Send me your 48-page illustrated booklet on "Dynamic Dryers"

Send a field-engineer to discuss my problems (no obligation, of course)

NAME \_\_\_\_\_

POSITION \_\_\_\_\_

COMPANY \_\_\_\_\_

PLACE \_\_\_\_\_

When inquiring specify CP 1870 . . . see information request blank, pgs. 2-3



## EASILY INSTALLED Propeloflo METER

The installation of Builders Propeloflo Meter in main lines is as easy as bolting in a valve or a corresponding length of pipe. The meter is compact and complete in itself . . . it operates accurately in any position from horizontal to vertical and totalizes all flow directly in gallons without the use of electricity or mercury.

Builders Venturi design of Propeloflo gives accuracy over a wide range of flow and very low pressure loss which means reduced pumping costs. The meter has ample reserve power to drive secondary instruments or operate proportional chemical feed controls. Its low cost, accuracy, and easy installation recommend the Propeloflo for many applications in lines 2" to 36". For Bulletin 350A, address Builders-Providence, Inc., (Division of Builders Iron Foundry), 47 Codding Street, Providence 1, R. I.

### BUILDERS PRODUCTS

Venturi, Propeloflo and Orifice Meters • Type M, Flo-Watch and Flo-Gage Instruments • Shuntflo Steam Meters • Kennison Nozzles • Chronoflo Telemeters • Conveyoflo Meters

**BUILDERS PROVIDENCE**  
*Instruments*

When inquiring specify CP 1871 — see handy form pages 2-3

Page 40

## Instruments

### Continuous Analysis of Complex Gas Streams Determined by Infra-red Analyzer

Automatic calibration made every 40 to 42 minutes against a standard of known concentration



Infra-red gas analyzer

USES — This instrument is useful in the petroleum, chemical processing and allied fields. It continuously and automatically analyzes, records, and, if desired, controls a specific gas in a stream consisting of several components.

Other uses include: analysis and control of furnace gases, analysis of carbon monoxide and carbon dioxide ratios in blast furnace operation, control of atmospheres in heat treating furnaces, to indicate excessive concentrations of undesired vapors in plant atmospheres, such as SO<sub>2</sub>, and other applications.

FEATURES — Ultimate sensitivity of the control-type analyzer is better than one part of carbon monoxide in 5,000 parts of air. The precision obtainable depends largely on the nature of the gas system under analysis; accuracy of results and freedom from interference by other components in the gas stream, are important features of the apparatus.

DESCRIPTION — Principle of operation of this unit is based on the use of two balanced infra-red beams from a single source. These are focused upon bolometers which are elements of a wheatstone bridge. Any difference in the energy incident on the bolometers unbalances the bridge and the amount of electrical off-balance is translated into a measure of the quantity of the absorbing gas in the sample.

To operate the analyzer, a stream of gas is passed at constant pressure through a sample cell that covers both infra-red beams. In addition, a relatively high concentration of the gas to be measured is maintained in a filter cell. This cell covers only one infra-red beam and one bolometer. Any absorption of the energy by the various components of the sample has a differential effect on the bolometer elements only when the absorption occurs in the portion of the spectrum in which the filter gas also absorbs.

Instrument is furnished with complete gas handling equipment, including flow meter, sample filter, dryer, and cooler, together with pressure regulating gauges for sample

### Dependable Controller for ABSOLUTE PRESSURE

• Equipped with stabilizing automatic reset and accurate, automatic compensation for barometric pressure, the Foxboro Stabilog Absolute Pressure Controller gives much closer control than possible with other automatic methods or manual control. It gives both stability and accurate performance in maintaining desired pressure, even on the most difficult applications.

Made in recording and non-recording models, with either round or rectangular cases. Foxboro Absolute Pressure Indicators and Recorders also are available.

Write for specific information on your application. The Foxboro Company, 190 Neponset Avenue, Foxboro, Massachusetts, U. S. A. Branches in principal cities.

**FOXBORO** ABSOLUTE PRESSURE CONTROLLERS

When inquiring specify CP 1872 — see handy form pages 2-3

### LABORATORY STIRRERS

with COMPLETE Speed Control



- Rheostat control from 0 up.
- Regular standard motor suitable for continuous service 110V.
- Plenty of power — will stir anything up to molasses.
- Fume resistant motor.
- Steel support rod.
- Can be clamped to any standard laboratory support.
- Rugged chuck — Cadmium plated, for 1/4" rod.
- Operated on either AC or DC, 110V.

This is just ONE of our complete line of high quality laboratory stirrers — of all kinds, for all purposes. Tell us your needs. We will be glad to advise you.

Write For Descriptive Bulletin 1404-W.

**MODEL 7605**

\$17.25

**PAI-MYERS INC.**  
81 READE STREET • NEW YORK 7, N.Y.

When inquiring specify CP 1873 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

## Instruments

gas, standard gas and nitrogen purging gas.

Unit is available as a completely equipped assembly, 21 inches square and 65 inches high. Additional information may be secured on request.

BAIRD ASSOCIATES, INC., Dept. CP, University Road, Cambridge 38, Mass.

When inquiring specify CP 1874 — see handy form pages 2-3

### Direct Reading pH Meter is Line Operated

Accuracy 0.1 pH; range 0 to 14 pH. Operates on 110 volt AC



Line-operated, direct-reading pH meter has a high degree of sensitivity, stability, and freedom from mechanical vibration or electrical interference.

By the use of a new circuit design, recalibration is seldom required oftener than once a week for most applications.

**DESCRIPTION** — A conventional bulb-type glass electrode is employed which is completely shielded, eliminating any electrostatic interference and permitting use directly in tanks or vats without being affected by grounded solutions. Additional shielding is provided by the metal case.

Electrode assembly is an integral part of the meter and is mounted on a door at the side of the metal case. Meter is ready for use by opening the door. When through with measurements, closing the door moves the complete electrode assembly into a compartment inside the case — out of the way. A recess in this electrode compartment holds bottles of buffer and KCL solutions.

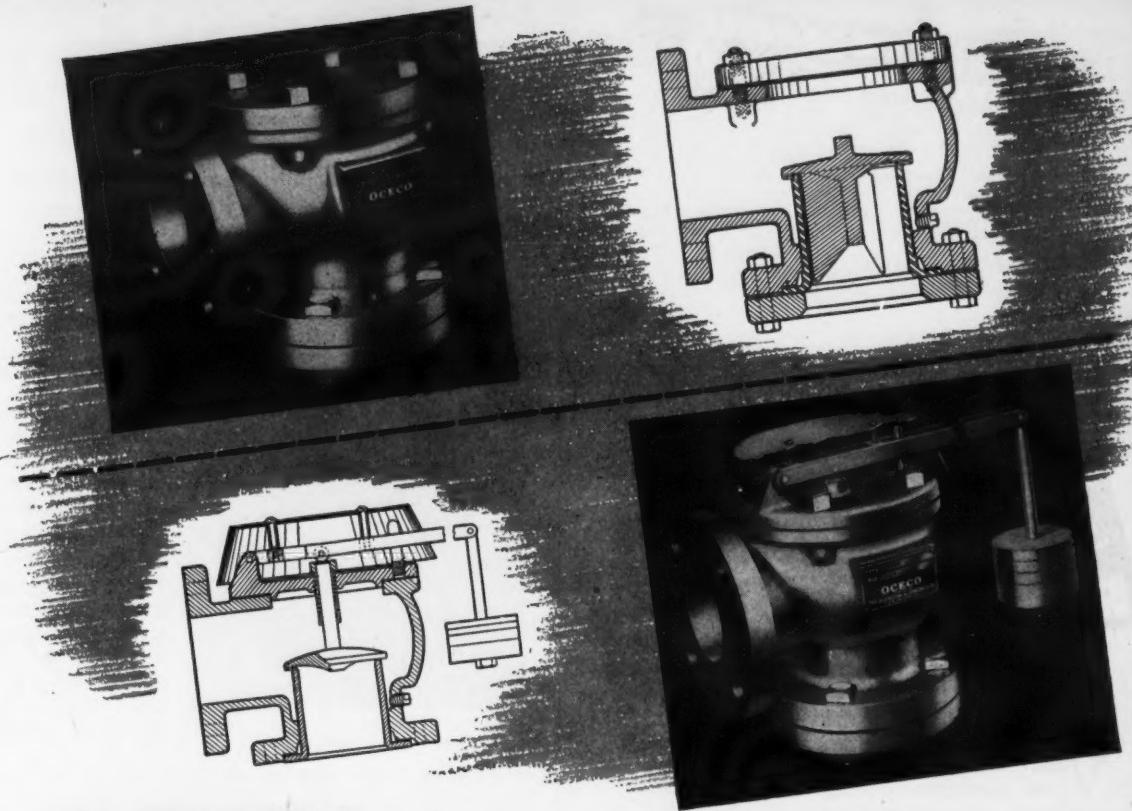
Case is equipped with a handle for convenience in carrying. Hooks on the back of the case permit suspension over a vat or tank, mounting on a wall, or hanging from a rack. Rubber toes on the bottom of the case allow the meter to be used on a bench or table. Weight of the instrument is 10 lbs.; size 7" x 8½" x 11¼". Literature on the industrial model pH meter is available on request.

CAMBRIDGE INSTRUMENT COMPANY, INC., Dept. CP, 3752 Grand Central Terminal, New York 17, N. Y.

When inquiring specify CP 1875 — see handy form pages 2-3

**USES** — Instrument is used to measure alkalinity or acidity of sample test solutions or of the contents of tanks and vats at various stages in the production process.

**FEATURES** — Unskilled workers can quickly and accurately use the instrument which reads direct in pH. Special design of the galvanometer movement insures a



## OCECO V-103 AND V-106 VALVES *provide positive protection against excessive vacuum and pressure*

● Oceco V-103 Vacuum Relief and Oceco V-106 Pressure Relief Valves are efficient, highly dependable and moderate in price. They require little or no maintenance, and reflect in every detail the advantage of our long and intimate experience with the needs of practical everyday operations.

These valves are furnished in 3" x 3", 4" x 4", and 6" x 6" sizes. They can be used in pairs when it is desired to protect the tank or vessel against the effects of both vacuum and pressure, or singly as required.

The V-103 Vacuum Relief Valves are designed for working pressures of 150 lbs. per sq. inch,

and maximum temperatures of 600°F. Standard vacuum relief setting is 4 oz. per sq. inch but settings from 1½ oz. to 1 lb. per sq. inch can be furnished on special order.

The V-106 Pressure Relief Valves—see views above—are also built to withstand working temperatures up to 600°F. They are of lever and weight design, and can be furnished with pressure settings from 2 lbs. to 30 lbs. per sq. inch to meet the individual requirement.

Complete details including body and trim specifications, and price data furnished promptly on request.

# OCECO

Division of THE JOHNSTON & JENNINGS CO.

CLEVELAND 14, OHIO

NEW YORK • PITTSBURGH • DETROIT • CHICAGO • ST. LOUIS • TULSA • BEAUMONT  
MOBILE • CASPER • SAN FRANCISCO • LOS ANGELES • TORONTO AND MONTREAL

When inquiring specify CP 1876 . . . see information request blank, pgs. 2-3



## GET RID OF THEM WITH THE CASH STANDARD Streamlined PRESSURE TYPE 1000 REDUCING VALVE

VALVES can be mighty sore spots on any line, particularly when they are affiliated with such cost makers as you see here.

Why go along under such conditions when the Streamlined Type 1000, CASH STANDARD changes the picture completely. It is then that you find new savings in costs and such other benefits that you can read right on this page.

**WRITE FOR BULLETIN "962"**—read the construction details of the "1000" and how it performs in your favor.

Maximum Capacity When Needed Most • Accurate Pressure Control Under Toughest Working Conditions • Trouble-Free Service • Smooth Operation • Tight Closure • Accurate Regulation • Speedier Production Results • Elimination of Failures • Constant Delivery Pressure • Cost Saving Operation • No Spoilage • Practically Zero in Maintenance Costs



CASH STANDARD  
CONTROLS...  
VALVES

A. W. CASH COMPANY  
DECATUR, ILLINOIS

When inquiring specify CP 1877 — see handy form pages 2-3

Page 42

## Instruments

### Air and Gas Velocities Measured Low as Five Feet per Minute

Principle of operation increases accuracy by minimizing errors due to temperature variations



Sensitive air velocity meter minimizes errors due to air temperature variations.

**DESCRIPTION** — Operation is based on a combination of the hot-wire and thermopile principles. Pickup

**USES** — Instrument is applicable to the measurement of velocities in ducts, measurement of wind velocities, measurement of flow in air and gas lines, and surveys of heating and air conditioning systems.

**FEATURES** — This air velocity meter will measure accurately velocities as low as five feet per minute. Principle of operation increases accuracy of instrument by



#### ELECTRIC FURNACE

The new MODEL CEA has been designed to give superior performance, with ease and economy of operation, at a low initial cost. It will stand hard use and is an ideal furnace for general laboratory purposes, heat-treating and small unit production.

#### SPECIFICATIONS

**Temperature Control** — Any temperature from 500° F. to 2000° F. can be selected and automatically maintained with TEMCO variable temperature control.

**Pyrometer** — Indicating type calibrated in both Fahrenheit and Centigrade scales.

**Dimensions** — Inside 4½" wide, 4½" high, 6" deep. Outside 12" wide, 15½" high, 14½" deep.

**Prices** — Model CEA Complete

For 115 V.—A.C. only \$80.00  
For 115 V.—A.C. & D.C. \$85.00  
For 230 V.—A.C. only.... \$85.00

- Heats up to 1500° F. in 30 minutes.

- Can be operated continuously up to 2000° F.

- Embedded heating element protected against damage and chemical deterioration. Muffle core easily replaceable.

- Insulated with highly efficient, light-weight materials cast permanently into furnace body.

**Other sizes available — Write for full information and name of nearest distributor.**

**THERMO ELECTRIC MFG. CO.** 476 W. Locust St., Dubuque, Ia.

When inquiring specify CP 1879 — see handy form pages 2-3

## Pneumatic Transmitters

### FOR MEASURING FLOW AND LEVEL

#### Operating On The Force-Balance Principle

Republic pneumatic transmitters (force-balance type) permit the centralization of process records without the necessity of running lead lines containing poisonous or explosive products into control rooms. By eliminating long lead lines, the consequent troubles due to vaporization or freezing are also eliminated. The Republic transmitter is located close to the point of measurement and the value transmitted pneumatically to some distant point where it can be either indicated, recorded or controlled.

#### FLOW

Republic pneumatic transmitters are particularly adaptable to the flow measurement and control of steam, water, gas, air or oil at static pressures up to 600 lb. per sq. in. They are built to operate on differentials as low as 0.9 in. of water and as high as 800 in. of water.

Pneumatic transmitters are also provided for the flow



Typical installation for measuring flow measurement of viscous or vaporous liquids which will either congeal or vaporize in lead lines exposed to atmospheric temperature.

#### LEVEL

There are three types of pneumatic transmitters by which liquid level measurement and control, in either open or closed vessels, may be secured.

1. The differential pressure type, in which the level is measured between the liquid level and a known reference level.

2. The buoyancy type, in which the buoyant force exerted by the liquid against a displacer tube is measured.

3. The weigh tube type, in which the weight of the liquid in a tube is measured.

#### Write For BULLETIN NO. 1000

**REPUBLIC FLOW METERS CO.**  
2245 Diversey Parkway • Chicago 47, Illinois

When inquiring specify CP 1880 — see handy form pages 2-3

**CHEMICAL PROCESSING Preview**

## SPECIALIZED ENGINEERING ASSISTANCE

Alberene Engineers can save you valuable time—possibly money as well by reason of their comprehensive knowledge of the design, re-design, fabrication and installation of laboratory equipment.

Over 50 years of service in the finest laboratories has proved Alberene Stone's exceptional durability—performance—and year-after-year economy. Write for Laboratory Catalog. Alberene Stone Corporation of Virginia, 419 Fourth Ave., New York 16, N. Y. Sales Offices in Principal Cities. Quarries at Schuyler, Virginia.

**ALBERENE STONE  
LABORATORY EQUIPMENT**

When inquiring specify CP 1878 — see handy form pages 2-3

## Instruments

element is a noble-metal thermopile which is placed in the air stream. Alternate junctions are arranged to have much greater cooling than the adjacent junctions which are heated by passing alternating current through the wire. Temperature rise of the warmer junctions is measured by the DC Thermo-electric voltage generated.

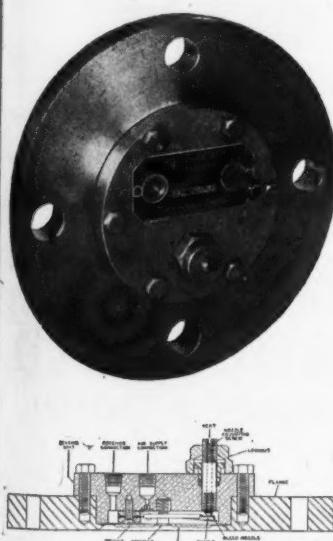
Instrument operates from 110 volts AC power that may be obtained either from the house wiring or from a portable power pack that is battery operated. Unit may be adapted for remote indication of velocity or flow of air or other gases. Output is suitable for operating standard strip or circular chart electrical recording instruments. Standard range of the instrument is from 0 to 2000 feet per minute. Fifty feet per minute is approximately 20% of full scale. Further information will be supplied on request.

HASTINGS INSTRUMENT COMPANY, INC., Dept. CP, P.O. Box 1275, Hampton, Va.

When inquiring specify CP 1881 — see handy form pages 2-3

### Liquid Level Measured and Transmitted Remotely

Unit has range of 450" of water with accuracy of plus or minus 1" of water



Liquid level transmitter

transmits an air pressure proportional to this level to the remotely located instrument. Unit is simple, sensitive, non-clogging and corrosion resistant.

**DESCRIPTION** — The unit consists of a metal diaphragm in a 3" 150 psi stainless steel flange which can be attached to the bottom or the side of an open or vented tank. It operates on a force balance principle.

Being a 1 to 1 transmitter, the output air pressure is equal to the applied pressure or liquid head and has a range of 450" of water with an accuracy of plus or minus one inch of water.

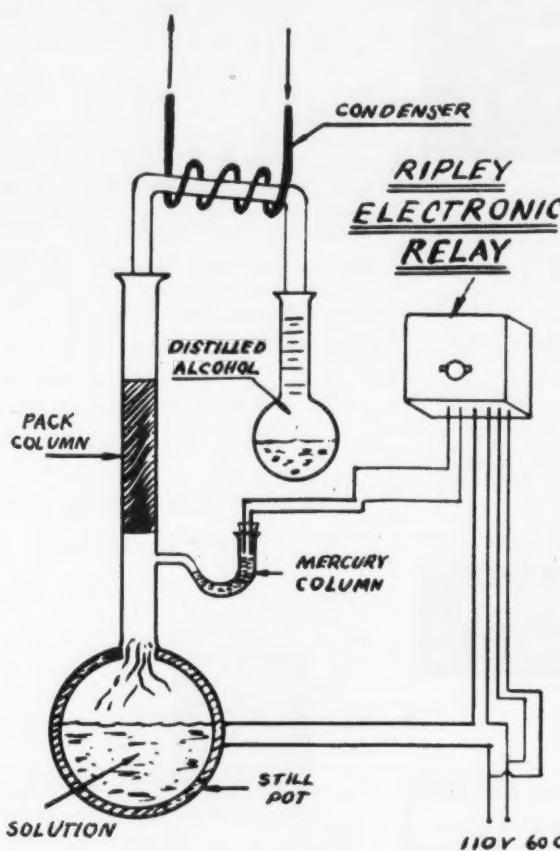
Bulletin 98069 illustrates and gives complete information on this device. Literature is available on request.

TAYLOR INSTRUMENT COMPANIES, Dept. CP, Rochester 1, N. Y.

When inquiring specify CP 1882 — see handy form pages 2-3

# STANDARD OIL of New Jersey

achieves maximum purity and yield in alcohol laboratory distillation with **RIPLEY ELECTRONIC RELAY**



Solution in still pot is heated to separate alcohol by fractional distillation.

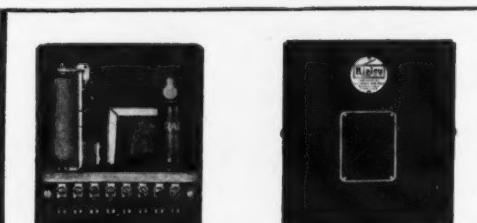
Temperature of solution must be sufficient to vaporize as much alcohol as the condenser will handle, but not enough to cause excessive pressure.

Formerly the complete operation was manually controlled. With the use of RIPLEY electronic relays the process is completely automatic, resulting in finer separation, faster operation at a much lower cost.

The Ripley Control, as illustrated by diagram, maintains the proper amount of heat applied to the pot. If the pressure increases, it causes the mercury in the branch tube to make contact between the electrodes controlling the electronic relay. The Ripley Control then immediately breaks the power supply to the heating element on the pot, relieving the pressure, which causes the mercury to withdraw from the electrodes. Thus power is restored to the heating element.

It was found that an accuracy of  $\pm .1$  mm. of mercury was easily attainable, with a range of 760 to 800 mm. resulting in the efficient operation which had long been sought for.

Send for Complete Information on RIPLEY Electronic Relays, Counters, and Controls.



Ripley electronic relays were designed to meet industry's need for a compact, easily installed, reliable control. Merely shorting the input contacts with an object 0 to 1,000,000 ohms energizes a 3 ampere relay capable of at least 6,000,000 operations. Ripley controls have been used successfully in liquid level control, relaying, pressureless limit switching, counting, and many other applications.

# Ripley

**RIPLEY COMPANY, Inc.**

Sales Office: 11 West 42nd St., New York 17, N. Y.

Factory: Middletown, Connecticut

When inquiring specify CP 1883 . . . see information request blank, pgs. 2-3



## COMPLETE AND SELF-CONTAINED



**Alnor  
Dew Point  
Indicator**

This precision Dew Point Indicator does not require external cooling means or auxiliary apparatus. It gives rapid, accurate determinations of dew point of any non-corrosive gas. Relative humidity, grains moisture per lb., and latent heat can also be obtained by conversion factors. Indications take place in an enclosed observation chamber under controlled conditions, reducing errors due to the human element and allowing consistent determinations by several observers.

The Alnor Dew Point Indicator has proved of great value in connection with controlled atmospheres in furnaces; for users and producers of compressed gases; with gas fuels; and in many industrial uses of air conditioning. Its simple operation and consistent accuracy encourage proper control of industrial processes wherever dew point is important. Write for Bulletin 4017.

### ILLINOIS TESTING LABORATORIES, INC.

Rm 504, 420 NORTH LA SALLE STREET • CHICAGO 10, ILLINOIS

When inquiring specify CP 1888 — see handy form pages 2-3

**SAVE  
TESTING TIME...**  
on Liquids  
or Solids

Identifying colors for chemical testing and quality control is easy with the G-E spectrophotometer—eliminates guess work. It has been adopted by the American Standards Association as the basic color-measuring instrument. The spectrophotometer is used continually at Western Regional Research Laboratory in Albany, California for studies in proteins.

You can test both liquids and solids—keep a graphic record of all color comparisons. Use it as a check on all mixing and blending operations. It's easy to use, requires little maintenance. Records are easily interpreted, may be kept indefinitely. Write for Bulletin GEA-3680A. Section 653-24, Apparatus Department, General Electric Co., Schenectady 5, N. Y.

**GENERAL ELECTRIC**

When inquiring specify CP 1889 — see handy form pages 2-3

JULY, 1947

## Instruments

middle and right hand legs and close the circuit between the middle and left hand legs. When liquid is replaced in the vessel or tank, float ball rises, piston goes up into the enclosing tube, and the magnet pulls in to tilt the mercury switch back to the former position at normal operating level.

Switch housing cover has  $\frac{3}{4}$ " conduit connections. Cover is held in place by one screw, permitting easy access for inspection or adjustment.

FRED H. SCHaub ENGINEERING CO., INC., Dept. CP, 2110 S. Marshall Blvd., Chicago 23, Ill.

When inquiring specify CP 1890 — see handy form pages 2-3



### Surface and Sub-surface Temperatures Measured with Interchangeable Couples

A surface pyrometer with interchangeable thermocouples and extension arms is described and illustrated in a four-page bulletin. Instrument has  $4\frac{1}{4}$ " diameter indicator and reading scale. Eight different types of thermocouples are illustrated and their applications listed.

Locking connector prevents thermocouple from becoming loose when instrument is in use. Catalog No. 160 is available on request.

THE PYROMETER INSTRUMENT CO., Dept. CP, 103-105 Lafayette St., New York 13, N. Y.

When inquiring specify CP 1891 — see handy form pages 2-3

## MOISTURE ENGINEERING

with the KATHABAR System  
automatically and accurately provides

**THE PROPER  
Humidity**

— independently of temperature —  
for processing operations in the  
manufacturing of:

DRUGS, PHARMACEUTICALS, CHEMICALS,  
FOODS, OR ANY PRODUCT OR MATERIAL  
AFFECTED BY EXCESS HUMIDITY CONDITIONS.  
... Write for information.

SURFACE COMBUSTION • TOLEDO 1, OHIO

**Kathabar System of  
HUMIDITY CONTROL**  
ADVANCED AIR CONDITIONING

When inquiring specify CP 1892 — see handy form pages 2-3

## SEEING UNLIMITED

with the NEW

## PALMER Thermometer

• It looks as clear and bright as the desert on a sunny day—when you look at the new Palmer Thermometer. The Extruded Brass Case plus famous "Red-Reading-Mercury" does the trick! You get a standard beautiful chrome finish at no extra charge . . . a full, easy-to-see scale with large, clear numerals, offering visibility never before available.

Other new features include "snap-on" cap, double strength, non-rattling glass, dustproof, fumeproof case. Write for new Bulletins 46-2 and 46-3 for full data.

AND REMEMBER — specify this new thermometer on original equipment purchased from your jobber or equipment manufacturer — there should be no extra charge!



In 7, 9, and 12 Inch case sizes with chrome finish; in 4 and 6 inch sizes with nickel finish.

## PALMER THERMOMETERS, INC.

Mrs. of Industrial, Laboratory, Recording & Dial Thermometers  
2519 Norwood Avenue Cincinnati 12, Ohio  
Canadian Plant: King and George Sts., Toronto 2

When inquiring specify CP 1893 — see handy form pages 2-3

## MERCOID

SOLVES INDUSTRY'S AUTOMATIC CONTROL PROBLEMS

There is scarcely an industry that is not using a Mercoid Control somewhere on vital applications in the control of temperature, pressure, liquid level, mechanical operations, etc. See catalog No. 600



**THE ONLY 100%  
MERCURY SWITCH  
EQUIPPED CONTROLS**

Temperature Control—For numerous applications. The operating range is plainly indicated on a visible dial. No guesswork—easy to adjust.

Mercoid Switches—A recognized superior brand of mercury switches available in tilting or magnetic types in various sizes and electrical ratings.

Mercoid Relays—With mercury contacts. Transformer-relay type and others. Available in various circuits. Very dependable and quiet in operation.

Pressure Control—For various industrial applications. The operating range is plainly indicated on a visible dial. Adjustments are easily made.

THE MERCOID CORPORATION  
4227 West Belmont Avenue, Chicago 41, Illinois

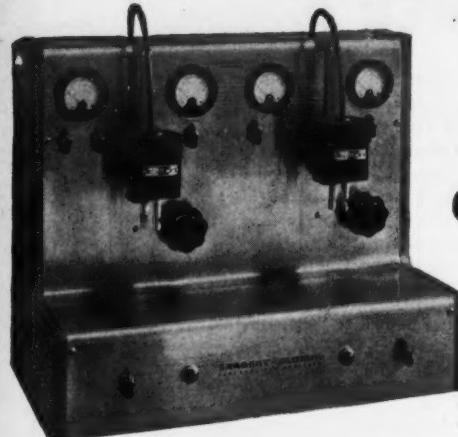
MANUFACTURERS OF AUTOMATIC CONTROLS FOR HEATING, AIR CONDITIONING, REFRIGERATION AND NUMEROUS INDUSTRIAL APPLICATIONS. ALSO MERCOID BRAND MERCURY SWITCHES.

When inquiring specify CP 1894 — see handy form pages 2-3

Page 45

# SARGENT-SLOMIN

## Electrolytic Analyzers



FOR  
HIGH SPEED  
QUANTITATIVE  
ANALYSIS  
OF

- Ferrous and non-ferrous metals and alloys.
- Electroplating solutions and electro-deposits.
- Ores and minerals.
- Metals in biological materials.
- Metals in foods, soils, etc.
- Forensic materials.
- Micro and semi-micro specimens.

### Designed for continuous trouble-free performance

The new Sargent-Slomin Electrolytic Analyzers represent a complete re-design of the original Slomin instruments. Each unit is mounted within a case consisting of a one-piece stainless steel panel, beaker platform and apron with sturdy end castings. All models are completely self-contained and operate from 50-60 cycle electric circuits—no auxiliary generators or rheostats are required.

The two position analyzers consist of two complete, independently operating analyzer circuits. Duplicate or check analyses can be run at the same time or two different analyses can be run simultaneously at different current densities.

The central electrode is rotated by a new synchronous capacitor wound motor, operating at 550 r.p.m., especially engineered for this application. Under development for five years, this motor has been thoroughly tested and approved for continuous operation. Fully enclosed for protection against corrosive fumes—the shaft, sleeve bearings, and cap are made of stainless steel.

Outstanding features of this rugged motor are:

Greater output than any motor of similar characteristics and size.

No internal switches or brushes.

**E. H. SARGENT & COMPANY, 155-165 E. Superior St., Chicago 11, Ill.**  
Michigan Division: 1959 East Jefferson, Detroit 7, Michigan

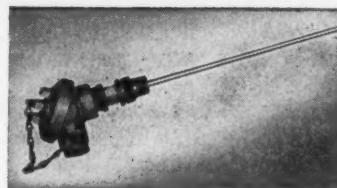
**S A R G E N T**  
SCIENTIFIC LABORATORY SUPPLIES

When inquiring specify CP 1895 — see handy form pages 2-3

### Instruments

#### 1000° F. is Maximum Range of Resistance Thermometer Bulb

Speed of response is fast. Standard lengths six and twelve inches



Industrial Thermohm (resistance thermometer bulb)

**FEATURES** — Amply accurate for the more exacting industrial requirements — speed of response is fast. Ruggedly constructed and easily installed.

**DESCRIPTION** — Corrosion-resisting stainless tube gives protection for normal pressures and non-corrosive fluids. Can be used with protecting wells where required. Temperature coil is thoroughly protected against contamination by moisture or gases.

Equipped with the standard universal head that facilitates installation and connection. Standard lengths are six and twelve inches. Complete details are available on request.

LEEDS & NORTHRUP COMPANY, Dept. CP, 4934 Stenton Ave., Philadelphia 44, Pa.

When inquiring specify CP 1896 — see handy form pages 2-3

#### Instrument Measures Mobility and Consistency of Materials in Original Containers

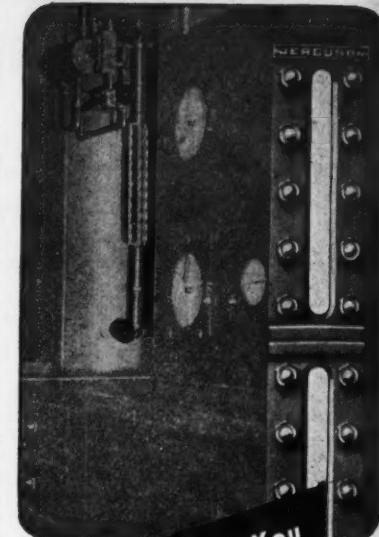
Speeds determinations and eliminates transfer of samples

**USES** — This instrument will determine the mobility or viscosity of various industrial products such as; paints, pastes, vitreous enamel slips, mayonnaise, lubricant greases, emulsions, dispersions, oils and other viscous or semi-plastic products.

**FEATURES** — The can mobilometer permits the measurement of samples in their original containers, which eliminates the necessity of transferring the sample being tested. It also allows a clean procedure of test, and reduces cleaning of parts to a minimum after a material has been tested.

**DESCRIPTION** — The instrument consists essentially of a cylinder supported by a bracket, a vertical support which moves this unit in a vertical reciprocal direction by means of a rack and pinion drive, a moving system, a piston guide, and a base plate. The moving system consists of a 51-hole disc, a piston rod and a weight pan. Moving system weighs 100 grams. Two supplementary discs, which greatly extend its range are also supplied. The unit will accommodate any size can from one-half pint up to one-half gallon, with a diameter of 5. cm. or more. At least a 200ml. sample is required.

A certificate of standardization applying to the 51-hole disc only is furnished with each instrument. Also sup-



Jerguson Builds You  
THE KIND OF GAGES  
YOU WANT



Jerguson  
Transparent  
Gage

You can get the kind of gages YOU WANT when you take your gage problems to Jerguson.

If you want a special gage or valve, or an adaptation of some standard one for a particular need, we'll give it to you. Our technically trained engineers have the ability, the know-how and the WILLINGNESS to pitch in and help you solve your problems.

Standard gages and valves, of course, are available at Jerguson's in the most complete and varied line offered anywhere.

Chemicals that raise havoc with ordinary gages can be handled with Jerguson special material and lined gages.

Write us about  
your problems or  
requirements.



When inquiring specify CP 1897  
— see handy form pages 2-3

plied is a pint sample of mineral oil certified to have the viscosity marked on the label. This sample is to be used for recalibration purposes according to instructions on the label.

Detailed information on the can mobilometer is available on request.

HENRY A. GARDNER LABORATORY, INC., Dept. CP, 4723 Elm St., Bethesda 14, Md.

When inquiring specify CP 1898 — see handy form pages 2-3

\*

## Flush Mounting Design Available in Electric Counters

*Permits remote location of counters on panel in production control room*



Flush mounted electric counter

FEATURES — Designed for installation, reading and reset from the front of the panel. Any number of counters can be grouped on a centralized panel. May be mounted on a panel with other flush mounted instruments, or on individual machines.

DESCRIPTION — Unit consists of an electric counter equipped with subpanel for attaching to any suitable opening. Counters are actuated by electric impulses which may originate from any suitable switch, relay or photo-electric unit and can be located at any distance from the source of the count.

Counters are made in 4 and 6-digit models with front-of-panel knob reset or key reset. Can be furnished in most voltages up to 220 AC or DC. Descriptive bulletin available on request.

PRODUCTION INSTRUMENT COMPANY, Dept. CP, 702-04 W. Jackson Blvd., Chicago 6, Ill.

When inquiring specify CP 1899 — see handy form pages 2-3

\*

## Boiler Pressure Maintained with Intermittent Coal Feed Control

Ram-fed stokers with capacities of 75 to 315 boiler h. p. are described and illustrated in 8-page bulletin. Stokers may be driven by electric motor, steam turbine or steam engine. Large cross-section view shows construction of stoker and how it is installed in a boiler. Operation of the automatic air volume control and intermittent coal feed control is explained fully by means of diagrams and illustrations. Bulletin No. S-32 is available on request.

THE BROWNELL CO., Dept. CP, 442 N. Findlay, Dayton 1, Ohio.

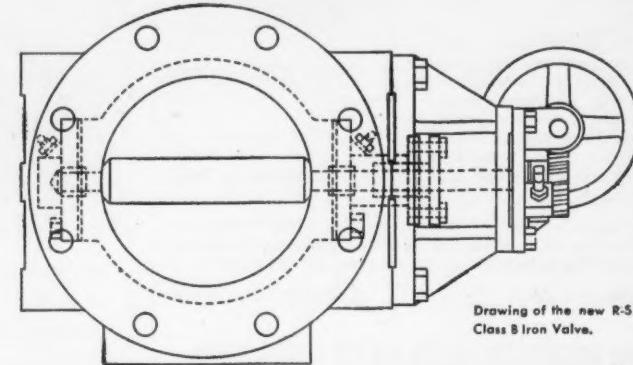
When inquiring specify CP 1900 — see handy form pages 2-3

ISSUED PERIODICALLY BY R-S PRODUCTS CORPORATION, PHILADELPHIA 44, PA., FOR THOSE CONCERNED WITH FLOW CONTROL AND SHUT-OFF

## Here is the New 50 pound R-S Class B Iron Valve

The print shows the construction of a new member of the R-S Valve family. This R-S Butterfly Valve is made for rugged hydraulic service with a large safety factor for line stresses, water-hammer, and other abuses. It is enjoying excellent acceptance for use in circulating water lines for condenser service. Available with 25# or 125# American Standard flanges. The usual four types of manual control or a multiplicity of automatic controls may be fitted. Supplied in any metal that can be cast or welded, including steel with Series 15 150# American Standard flanges.

The new valve has the characteristic R-S angular seating disc giving wedge-type closure. It may be equipped with the renewable, replaceable R-S patented rubber spool for 100% positive shut-off if desired. This type of unique R-S shut-

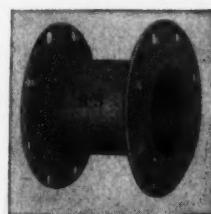


Drawing of the new R-S 50# Class B Iron Valve.

off has been tested in service for as many as 10,000 violent full-open-to-full-closed sequences without a trace of leakage. (Good to the last drop!)

## R-S Rubber-seated Butterfly Valve

### Now Available up to 72-inch Size!



Patented renewable  
replaceable rubber liner



Installing liner in valve body



Rubber liner in position

The growing demand for complete shut-off in the Butterfly Valve is leading to the development of larger and larger sizes in the R-S Rubber-seated unit.

Having completed the line up to and including the 72-inch size, we are now working on sizes up to and including 108-inch diameters.

These large sizes are Colossal. When we build larger ones they will be Titanic. The larger sizes are identical in functional characteristics with the 6-inch rubber-seated valve illustrated. The unique R-S spool provides for the first time in the history of Butterfly Valves a 100%-effective heavy-duty shut-off. It operates with complete success in the temperature range from -20° to plus 200°F., and we are in the process of perfecting R-S "H" rubber for higher and lower temperatures.

Perfect closure is made by the wedge-like action of the butterfly disc closing inside a one-piece flexible rubber spool. The spool bunches up around the periphery of the disc to make drop-tight closure even at the shaft-bosses. A special composition of rubber and other materials assures retention of resilience and wearing qualities for an amazingly long time.

The spool is renewable and replaceable as shown in the illustration. The flanges of the spool, drilled to fit body-flange holes, take the place of the usual flange-gaskets. The rubber-seated valve has been giving exceptionally good service in handling gases, liquids, powdered materials and other semisolids; in fact anything that can be pushed through pipe lines. Patent is pending.

R-S Butterfly Valves may also be had with a rubber lining if desired. The rubber lining, in addition to positive shut-off also offers complete protection of body, shaft, bushings, etc., from liquids and gases of a corrosive nature.

## Wider Representation of R-S Butterfly Valves

Four new representatives, three in new territory, are now handling R-S Valves. We are glad to announce the new distributors to R-S customers in the following places:

### Richmond, Virginia

Frank Howell Company, American Building, Richmond 1, Virginia, handling the state.

### Charlotte, North Carolina

Purser & London, Inc., 816 Independence Building, Charlotte, North Carolina, handling the Carolinas.

### Venezuela

Roberto Diaz, Caracas, Venezuela, handling the entire country.

### Panama

Agencias Pan-Americanas, S. A., Calle Estudiante No. 90, Apartado 557, Panama, Rep. de Panama, handling the entire country. W. S. Eskildsen is in charge.

## Complete R-S Valve Installation Data

Engineers like the complete dimensional data supplied for R-S Butterfly Valves. Dimensions are tabulated by standard sizes under stock types and identified by letters corresponding to detailed drawings which accompany the tables. Six full pages of R-S Products' Catalog No. 14-B (copy on request to R-S Products Corporation, Wayne Junction, Philadelphia 44, Pa.) are devoted to this basic installation data.



When inquiring specify CP 1901 . . . see information request blank, pgs. 2-3

# ASK SEEDBURO about Moisture Testing

When you have a moisture testing problem present it to Seeburo—the organization referred to for over 35 years as "Headquarters for Moisture Testing Know How."

Men of Seeburo have technical and practical knowledge of the most effective methods of finding the true moisture content of dehydrated foods, cocoa, grains, feeds, nuts and a host of other products. They have helped large numbers of firms solve their moisture testing problems . . . very likely they can help you.

Seeburo offers a moisture tester for every need—Hence is able to make impartial recommendations. Submit your moisture testing problem today . . . no charge, no obligation.

767 CONVERSE BUILDING



The Steinlite electronic moisture tester is fast, accurate and easy to use.

CHICAGO 6, ILLINOIS

# SEEDBURO

EQUIPMENT COMPANY

When inquiring specify CP 1902 — see handy form pages 2-3



The LESLIE Pressure Controller is particularly useful for supplying intermittent make-up to a low pressure system from a high pressure line. The action is positive and follows low pressure fluctuations with fidelity. The sequence is simple: Low side pressure changes operate the diaphragm in the control pilot which in turn regulates the pressure of the operating medium—air, gas or liquid—on the diaphragm of the regulating valve in the high pressure line.

Write for Bulletin 462 for the complete story.

**LESLIE CO.**

281 Grant Ave., Lyndhurst, N.J.



PRESSURE REDUCING VALVES • • PRESSURE CONTROLLERS  
PUMP GOVERNORS • • • TEMPERATURE REGULATORS  
SELF CLEANING STRAINERS • • LESLIE-TYFON WHISTLES

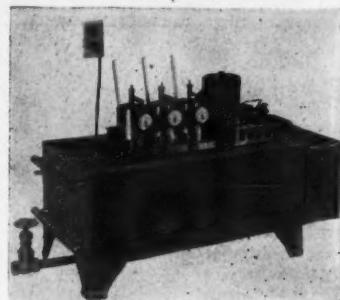
When inquiring specify CP 1903 — see handy form pages 2-3

Page 48

## Instruments

### Heat Distortion of Plastics Determined by Tester

Automatic temperature control maintains a 2° C. per minute rate of temperature rise throughout the range



Heat-distortion tester for plastics

USES — instrument is used to determine the heat distortion of plastics according to A. S. T. M. D648.

FEATURES — Unit employs a bimetallic thermoregulator which automatically maintains a 2° C. per minute rate of temperature rise throughout the range from ambient to 150° C., thus eliminating any manual methods of temperature control.

DESCRIPTION — Basic elements of the instrument are: an oil bath heated by a 2000-watt immersion heater, a centrifugal pump to circulate the bath liquid, a coil for cooling the bath liquid to room temperature after each test, a synchronous box, four specimen holders, and a loading stand for the specimen holders.

A pilot light indicates when the heater is on or off,



*EQUIP IT TO  
"GROW GRACEFULLY"  
ON KEWAUNEE'S  
"UNIT ASSEMBLY PLAN"*

*Experiment  
in YOUR LABORATORY NOT with IT!*

Take the "experiment" out of laboratory planning by installing Kewaunee Laboratory Furniture, Cabinets and Casework. Simply select the units you need—all match exactly and are interchangeable, permitting your laboratory to "grow gracefully." Made of finest materials . . . all working surfaces of KemROCK for resistance to acids, alkalies, abrasion and shock. Modernize efficiently—the Kewaunee way. For details—

WRITE: INDUSTRIAL DIVISION

Kewaunee Mfg. Co.

C. G. Campbell, President

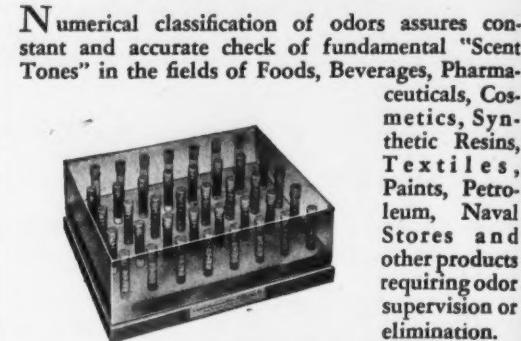
5011 S. Center St., Adrian, Mich. • Representatives in Principal Cities

When inquiring specify CP 1904 — see handy form pages 2-3

Now . . .

## SCIENTIFIC ODOR-CONTROL

with CROCKER-HENDERSON  
ODOR STANDARDS



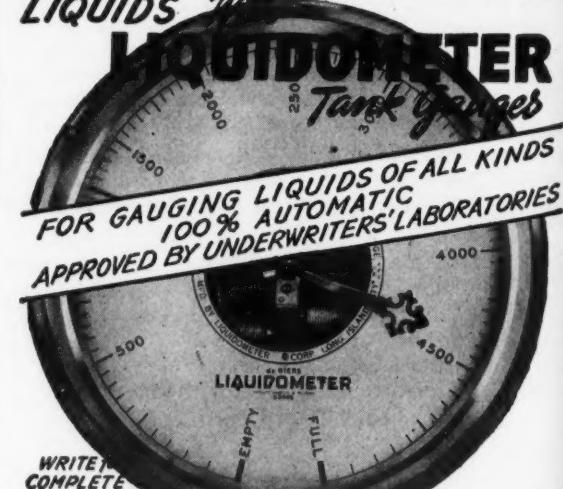
Set consists of 31 Odor Standards, in wood block, protected by transparent plastic cover. Additional empty test vials included.

A numerical specification for any odor. Complete set with instructions — \$35.00. Bulletin upon request.

Cargille Scientific, Inc.  
118 Liberty St.  
New York 6, N.Y.

When inquiring specify CP 1905 — see handy form pages 2-3

**COSTLY HUMAN ERRORS  
ELIMINATED WHEN YOU  
MEASURE VALUABLE STORED  
LIQUIDS**

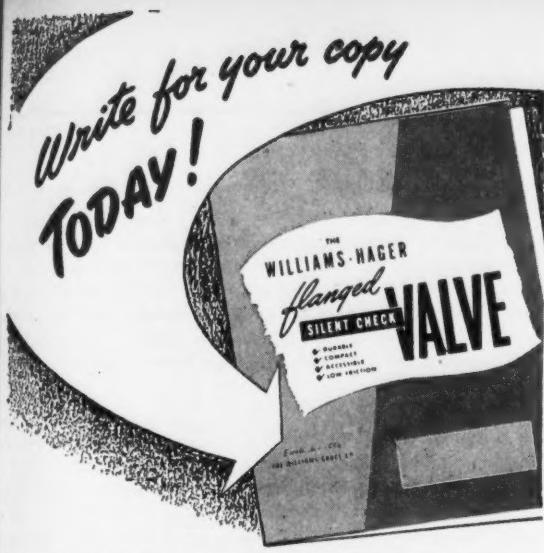


*"LIQUIDS WORTH STIRRING ARE WORTH MEASURING"*

**THE LIQUIDOMETER CORP.**  
38-18 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring specify CP 1906 — see handy form pages 2-3

CHEMICAL PROCESSING Preview



HAS "WATER HAMMER" BEEN A PROBLEM IN YOUR PLANT? This new bulletin completely describes the Williams-Hager Flanged Silent Check Valve—designed to meet this problem and one of the most important developments in Check Valve design. Thoroughly tested in every industry, for every type of service—with many installations serving trouble-free for upwards of 18 years.

THE WILLIAMS Gauge COMPANY,  
2920 PENNSYLVANIA AVENUE  
PITTSBURGH 12, PENNA.

When inquiring specify CP 1907 — see handy form pages 2-3

## ALL ELECTRIC FLOATLESS



Control variations in levels from  $\frac{1}{4}$ " upward. Remote control if desired — any distance. Controls unaffected by acids, caustics, pressures or temperatures.

Since 1933 B/W Controls have provided positive, dependable, economical liquid level control. No floats! No vacuum tubes! No moving parts in liquid.

WRITE FOR CATALOG 147

**B/W CONTROLLER CORPORATION**  
2204 East Maple Road, Birmingham, Michigan

FIRST IN THE FLOATLESS CONTROL FIELD

When inquiring specify CP 1908 — see handy form pages 2-3

JULY, 1947

## Instruments

vertically adjustable arms contact the spindles of the dial micrometers and permit adjusting micrometer needles to zero at the start of each test, and a well on top of each specimen holder permits the immersion of thermometers in the bath liquid.

Weights allow loads of 625, 1,250 and 2,500 grams to be imposed on the loading rod of each specimen holder. A detailed description of the unit is given in the manufacturer's literature which is available on request.

AMERICAN INSTRUMENT COMPANY, Dept. CP, Silver Spring, Maryland.

When inquiring specify CP 1909 — see handy form pages 2-3

★

## Sharper Microradiographs With Vacuum Exposure Holder

Negatives are reasonably sharp when magnified as much as 400 diameters

USES — Developed for use in microradiography, the device is a "vacuum exposure holder" modelled after those used in the graphic arts.

FEATURES — Better X-ray pictures of microscopically thin sections of metal, paper, and textiles are possible with this device that uses a vacuum to provide close contact between the section and the photographic plate.

Previously, poor contact between a section and a photographic plate, or repeated exposures because of movement, usually resulted in a lack of sharpness. This was noticeable in X-ray negatives magnified beyond fifty diameters.

DESCRIPTION — Holder consists of a rigid sheet of metal recessed enough to hold a glass photographic plate and the material to be X-rayed. When vacuum is applied through a tube leading to the recess, the section and plate are drawn together, and exposure is made with an X-ray tube.

With the new instrument, fuzziness due to poor contact is eliminated. Negatives are obtained that are reasonably sharp when magnified as much as 400 diameters. More information is available on request.

EASTMAN KODAK COMPANY, Dept. CP, Rochester 4, N. Y.

When inquiring specify CP 1910 — see handy form pages 2-3

★

## Flow Rate Meter Adaptable to Specialized Industrial Requirements

24-page catalog section describes instruments for measuring flow rate of liquids and gases. Sectional drawings and illustrations of the instruments, both assembled and disassembled, are included. Among new accessories shown is horizontal line adapter, making it possible to insert Flowrator meters in horizontal run as well as vertical pipes.

Details of front and rear panel mounting, rear lighting arrangements, steam heating coils and alarm devices are also included in the bulletin. Ask for Catalog Section 25-E.

FISCHER & PORTER CO., Dept. CP, 8E-C, Hatboro, Penna.

When inquiring specify CP 1911 — see handy form pages 2-3

the thermometer that remembers!

**WESTON**  
all-metal



## MAX-MIN THERMOMETER

The red index pointer on the MAX-MIN is manually set to either the low or high side of the main indicating pointer. When set on the high side, for example, it moves as the temperature increases, always remaining at the extreme temperature reached, until manually re-set. Thus one quick reading gives both present temperature and the peak temperature since last reading. For complete details see your jobber or local Weston representative. Weston Electrical Instrument Corporation, 618 Frelinghuysen Ave., Newark 5, N. J. \*Reg. T. M.

**WESTON**  
Instruments

When inquiring specify CP 1912 — see handy form pages 2-3

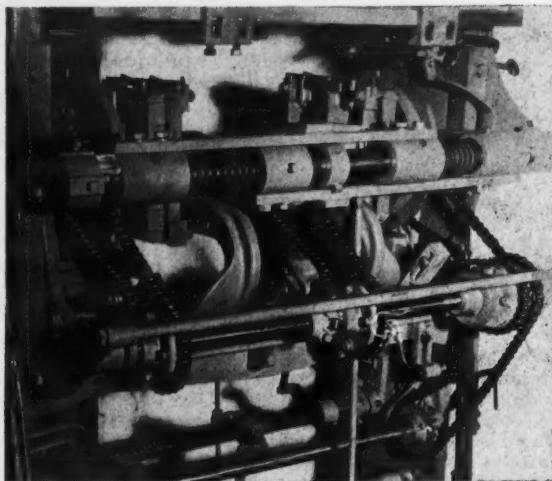


AUTOMATIC TEMPERATURE CONTROL CO., INC.  
LOGAN ST & GERMANTOWN AVE • PHILADELPHIA 14, PA.

When inquiring specify CP 1913 — see handy form pages 2-3

# DRIVES --

for America's Machinery



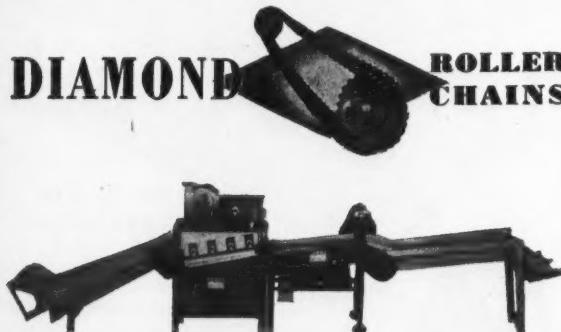
Automatic high-speed Box-Making Machine equipped with DIAMOND Roller Chain Drive for economy and greater output.

DIAMOND Chain versatility is well illustrated in chemical and allied industries because of the great variety of machinery employed. Here, among leading manufacturers, despite the great diversity of equipment, there is unanimity in the selection of the drives — DIAMOND Roller Chains.

For low or high-speed drives, for conveying, packaging, sorting and grading machinery, for driving agitator mechanism from pump counter-shaft, between motor and pump, as main and inter-machine drives — DIAMOND Chains are selected as the simplest, most reliable and economical drives.

Our engineering staff can help you reduce costs and prevent production delays — write DIAMOND CHAIN COMPANY, Inc., Dept. 411, 402 Kentucky Ave., Indianapolis 7, Indiana.

Send for helpful Chain Drive Catalog 617.



This unit consists of elevator, cleaner, grader, sorting table and bagger — employing DIAMOND Roller Chain extensively.

When inquiring specify CP 1914 — see handy form pages 2-3

Page 50

# Ideas

## Odor Removal Fits Petroleum Drying Oils for Use in Inks

*Brittleness and color do not retard effectiveness; suitable for red, yellow, brown, black inks*

In seeking sources of drying oils for inks attention has been directed to certain petroleum distillates because they possess the desired drying characteristics. However, their color and tarry odor has been a restricting factor. The color while somewhat dark is not too bad since the undertones are yellowish rather than brownish. The oils can, therefore, be used in red, yellow, brown and black inks when the odor has been removed.

Research in the laboratories of the National Printing Ink Research Institute, — Lehigh University, Bethlehem, Pa., has developed a process which removes the odor.

The petroleum cut used in the process is a low boiling point, highly olefinic fraction which is processed until a product having a saybolt viscosity of 100-300 at 21F., a flash point of at least 200° in the Cleveland open cup, a specific gravity at 60° F. approximately 1.0 and an iodine value (Wijs) of at least 175 and preferably 190-200.

The quantity of raw material available is between 800 and 1000 barrels per day. Cost is low.

The process does not require extensive equipment, is low in operating cost and large volumes can be processed. (I. M. Bernstein, director and Sam Nelson, research fellow, — National Printing Ink Research Institute, Lehigh University, Bethlehem, Pa.)

★

## Calculate Pigment Particle Size Distribution With Centrifuge

*Indicated by amount and position of sediment on wall of bowl*

In producing pigments with the most satisfactory characteristics for the various uses to which they may be put, a knowledge of the size and distribution of sizes in pigment particles is important. In many cases the particles are too small to be resolved by the ordinary light microscope, i.e. if they are spherical and their diameters are less than 0.5 microns. In some cases they are too fine to be resolved by the electron microscope; as for example when they have diameters of less than 0.01 micron.

In order to obtain the most accurate information about the size and size distribution of such fine particles it has been indicated in research laboratories that a combination of results of three methods is of considerable advantage. These methods are the electron microscope, gas or vapor absorption and centrifugal sedimentation.

The electron microscopic determination of the particle size of the pigment is the most direct and it also gives an indication of the shape of the particles. However, the determination of the particle size distribution by this method involves tedious measurement and counting of a considerable number of individual particles recorded in the electro micrographs. Also the smallness of the sample employed and the difficulty of obtaining good dispersion of the

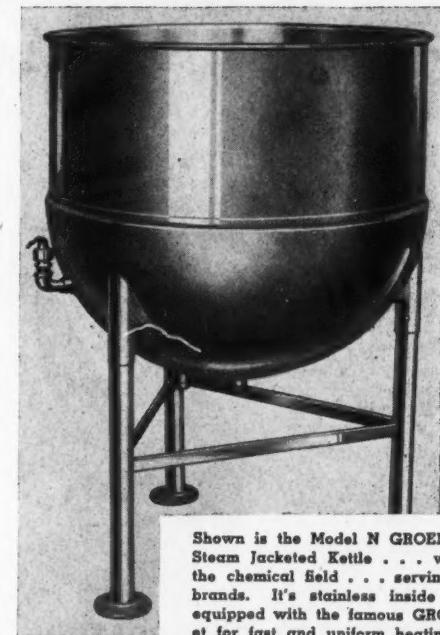
pigment for such small samples often presents a serious difficulty.

The gas or vapor absorption is an indirect method which may be applied to a dry pigment sample and leads to an average particle size. It gives no indication at all of the size distribution and may give misleading results, if the shape of the particle is irregular, if they are porous or if the pigment has received a surface treatment that is difficult to remove.

In the sedimentation of pigments from a dilute dispersion in water or some other liquid, the particle size is related to the rate of settling. Since the particles are so fine a very great settling force such as that obtained in a high speed centrifuge is necessary in order that sedimentation may occur in a reasonable time. The Sharples Supercentrifuge is a commercial instrument capable of speeds up to 50,000 RPM which speed gives a settling force great enough to cause the sedimentation of all but the finest pigment particles of low density in a few minutes.

At the Calco laboratories a method has been developed (published recently in the 1946 proceedings A.S.T.M.) for calculating the particle size distribution of a pigment from the amount and position of the sediment on the walls of the centrifuge bowl in a single sedimentation experiment. The chief advantage of this method is that the particle size distribution is obtained with relative ease. It is limited in that the underlying theory considers only

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CHEMICAL PROCESSING Preview

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spherical particles and the final result depends on the ability to obtain a good dispersion of pigment prior to sedimentation.

By combining these three methods of determining the particle size of pigments, information is obtained that is helpful in the study of development of pigments with the proper particle size and size distribution for various uses. (Summarized from Dyelines & Bylines-Calco Chem. Div.-American Cyanamid Co., Bound Brook, N. J.)

\*

## Water in Freon Measured to Accuracy of 1 PPM

New technique utilizes infra-red spectrometer; method also used for certain organic gases, liquids

A technique which makes use of the infra-red spectrometer is capable of determining the water in "Freon" and certain other fluids with an accuracy of one part per million, and an analysis can be made in five minutes. This is described in a paper by A. F. Benning, A. A. Ebert and C. F. Irwin of the Organic Chemicals Department of E. I. du Pont de Nemours & Co. before the American Chemical Society.

The infra-red technique is quite simple in theory, it was stated. Invisible light, with a wavelength of 267 microns, is passed through a transparent cell filled with the sample to be tested. The "Freon" absorbs very little of the radiation at this particular wavelength, but water very strongly absorbs this type of visible light.

Thus, by means of a device which automatically records the intensity of the infra-red light before and after it has passed through the test cell, the amount of water may be read directly from a calibrated scale.

Through the use of this analytical tool, the purity of fluorine refrigerants is being controlled to a degree not previously possible. Refrigerants of this type are now available with a water content "not in excess of ten parts per million." They are usually delivered at from four to five parts per million, corresponding to about one teaspoonful of water to a ton of refrigerant. In reference to water content this means a purity of 99.99% per cent or better. (E. I. du Pont de Nemours & Co. — Chemical Department — Wilmington, Del.)

\*

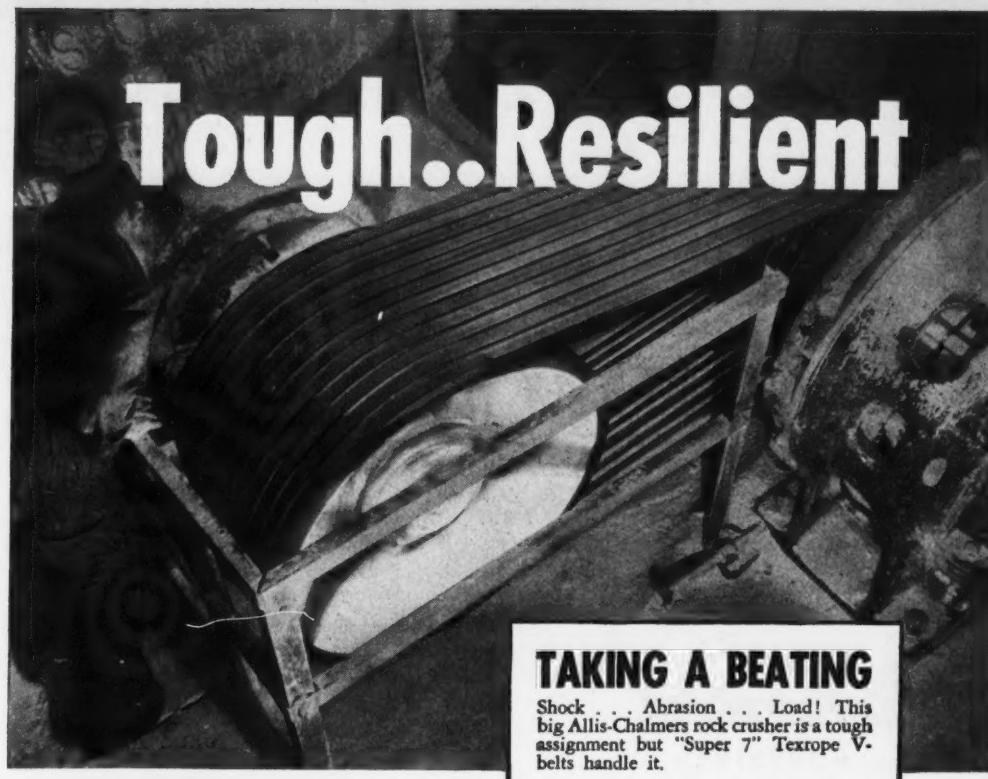
## Coating Deepens Blueprint Blue, Increases Legibility of Paper

Silica aquasol used as precoat to blueprint solutions

The blue of a blueprint is deepened and legibility of the paper increased by means of a new chemical coating. The product is a silica aquasol known as Mertone WB-2 and is used as a precoat on a paper which is subsequently coated with light, sensitive blueprint solutions.

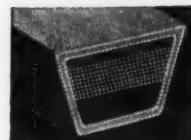
The Mertone precoat makes possible a more uniform coverage by the blueprint solutions, provides greater brilliance and color depth and increased legibility of the paper. It also minimizes the graying effect caused by over-exposure.

Applicable to all blueprint formulae, the coating can be applied in paper mills and coating plants on the same machine used to apply the sensitizing solution. The use of the Monsanto silica aquasol was developed by the H. P. Andrews Paper Co. as an exclusive license, and the right to sublicense has been granted to Monsanto. (Monsanto Chemical Co., St. Louis, Mo.)



### TAKING A BEATING

Shock . . . Abrasion . . . Load! This big Allis-Chalmers rock crusher is a tough assignment but "Super 7" Texrope V-belts handle it.



### ... You get 7 Great Features in "Super 7" Texrope V-Belts

1. TOUGHER COVER. Two layers of tightly woven long-staple cotton fabric and tough, wear-resistant rubber compound. Protects the belt carcass from grit, moisture and wear — holds its shape — assures maximum belt life.
2. SHOCK ABSORBING. "Super 7" belts combine great strength with the degree of resiliency necessary for long life and smooth power transmission.
3. HEAT RESISTING. All "Super 7" V-belts are designed and built to give high resistance to heat.
4. STRONGER CORDS. More cords—imbedded in cool-running rubber compound. A powerful load-carrying structure.
5. PRECISION CURED in pressure molds to assure accurate section and perfect bonding of cords, cover and cushion.
6. ACCURATELY MATCHED. Every belt weighed, measured and carefully inspected before being sized and packed.
7. ENGINEERING LEADERSHIP. "Super 7" Texrope V-belts represent 22 years of research and experience — by Allis-Chalmers, originator of the Multiple V-belt drive.

"Super 7" Texrope V-belts come in five types to meet every operating requirement: Standard — Heat Resisting — Oil Resisting — Oil Proof and Static Resisting. Call your Allis-Chalmers office or dealer. ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN.

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Refer to Sweet's Catalog.

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.. Greatest  
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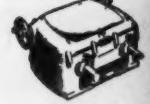
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to suit every power  
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range of sizes,  
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SPEED  
CHANGERS  
Speed variations up  
to 375% at the turn  
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- GLASS
- WOOD
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ADHESIVES

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## Need Easy Control and Quick Shut-Off?

Rockwell Slide Valves or Butterfly Valves provide the low cost means of controlling fluid flow effectively and efficiently, manually or automatically. Wedge tight shut-off is simple, quick, easy. They are built of any desired metal, light, strong, durable; threaded or flanged. Slide Valves pipe sizes — 1" to 20"; Butterfly Valves — 1" to 60" and larger. Write for Catalog 406R.

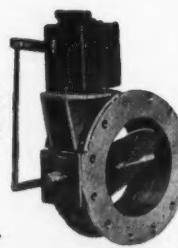


Standard Slide Valve, pull handle control; also with lever or wheel control.

"Kwikene" Slide Valve for dirty gases; quick opening for easy cleaning; pull handle, lever or wheel control.

Wafer Butterfly Valve with hand wheel control; also with lever, chain wheel or automatic control.

Standard Butterfly Valve with electric motor control; also with any manual or automatic control.



## ROCKWELL VALVES

Slide or Butterfly Types in All Metals

W. S. ROCKWELL COMPANY — 220 Eliot St., Fairfield, Conn.

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## Ideas

### Analyzer Projects Production Capabilities of Oil Fields

Electronic device solves equations of technologists

An oil pool analyzer was recently completed for delivery to the California Research Corp., Whittier, California. Plans and specifications for the analyzer, designed by the Carter Oil Co., were offered the industry royalty-free when the robot first was unveiled. The "mechanical brain" is the invention of Dr. W. A. Bruce, Tulsa, Carter physicist and inventor.

The analyzer has almost super-human talents since it can solve equations and statistics of technologists and help them develop the possible life history of an oil field, projecting its production capabilities 25 years or more in the future.

The apparatus is housed in a case seven feet high, has 2800 sockets and plugs which, when connected and arranged in combinations, can duplicate water and gas pressure in an oil pool thousands of feet in the earth.

Acceptance of the analyzer's accurate performance is indicated by the fact that one large oil pool in the United States now is being operated by a unitization agreement based on computations worked out with the analyzer. (Carter Oil Co., Tulsa 2, Okla.)

### Selection of Metals Factor In Handling Boiler Tube Corrosion

Clean tubes on both sides, particularly hot side; ammonia-free water also vital

The effectiveness of some recent recommendations in combatting corrosion of metals in steam generating and superheater tubes is shown in two specific installations. One hundred high pressure boilers with steam temperatures between 900 and 950 degrees F. have had no troublesome corrosion. Also, six separately fired superheaters have operated more than three years with steam temperatures of 1300-1350 degrees F at 25-30 psi without corrosion.

The recommendations were presented in a paper before the Louisville, Ky. Congress of the Electro-Chemical society.

For high temperature superheater tubes, the paper showed how temperature shock affects the rate of corrosion on the steam side and the gas side of the tube. "With proper selection of ferritic type chromium-molybdenum steels alloys, steam and flue gas corrosion is not troublesome for metal temperatures up to about 1200 degrees F. For structural members, such as hangars and supports, chromium-nickel steel alloys are preferable for elevated temperature service."

A type of corrosion that has been quite serious, although not prevalent, in carbon steel tubes in high pressure boilers was described. This corrosion appears in the form of intergranular disintegration of the metal adjacent to a pit that is filled with iron oxide. Usually deposits of metallic copper, and oxides of copper, are present in the zone affected by corrosion, but the authors pointed out that metallic copper is often found in boilers that are not troubled by corrosion.



### Advanced PEERLESS JET PUMPS

Economically Produce the Water You Require for Light Industrial Needs

CAPACITIES: 120 to 7500 Gals. per Hour. From well depths to 120 Feet.



The Peerless engineering achievement of designing and building more efficient pumps with fewer moving parts has again been most successfully applied in the advanced Peerless Jet Pumping System. The trouble-free Peerless Jet Pump principle ingeniously applies the natural force of gravity, plus a minimum of mechanical power, to lift water upward by pressure from the Jet and force it to a pressure tank by means of an impeller. There is no simpler pump principle now being utilized where water lift requirements are comparable. Peerless Jet Pumps are easy to understand, install, operate and maintain. Once the constant-pressure Jet Pump is in operation, adjustment or repair is rarely needed. Extremely compact in design. Double or single pipe systems available in sizes from  $\frac{1}{4}$  to 3 H.P. Quietly supplies the water you require whether installed over the well or offset at a distance from the water source. Ideally applied to wells 2" inside diameter and larger for water supply requirements of light industry including ice and refrigeration plants, creameries, dairies, milk plants, institutions, hotel, laundries, municipalities, motel, country estates, schools, etc.



### See The PEERLESS Water King

Unique in design and operation. For shallow well installation only.

Fully protected Under R. Moineau U. S. & Canadian patents. For trouble-free simplicity of operation, this unique pump utilizes the same "magic" pumping element of the Peerless Hi-Lift Pump. Hard chrome pumping element wholly positioned and protected within pump base is highly resistant to abrasive and corrosive action. Assures a clean constant water supply. Requires a minimum of space and attention. 100% automatic. Easily installed over well or off-set.

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Factories: Canton 6, Ohio • Quincy, Ill. • Los Angeles 31, Calif. District Offices: Canton 2, Ohio; Philadelphia; Suburban Square, Ardmore, Pa.; Atlanta; Rutherford Blvd., Decatur, Ga.; Dallas 1, Texas.

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## Ideas

Dissolved ammonia in the boiler feedwater can bring copper into the boiler, providing there are materials containing copper in the system with which the feedwater comes in contact. It was stated that the principal relief from this corrosion has come from the following: eliminating or reducing as much as possible, the ammonia in the feedwater-steam system; maintaining the boiler water at a satisfactory alkalinity or pH level; reducing the dissolved oxygen in the feedwater to as nearly zero as possible; and maintaining a small but positive excess of sulphite in the boiler water. Copper and oxygen appear to be the principal agents involved in this type of metal damage.

In consideration of the high temperature corrosion of superheater tubes, general temperature conditions are to be considered and it may be pointed out that usually deslaggers are used to keep the tubes free from such accumulations.

The high metal temperatures experienced with these superheaters are in a range where a reaction between iron and steam will occur, where air oxidation can be severe, where the strength of ferritic type alloy steel is relatively low. Because of the creep characteristics of steel at high temperatures, it is pointed out that stress must be considered in discussing corrosion, since they are closely associated where failure occurs.

It was stated that temperature shock was the main factor, but that it is possible to obtain satisfactory deslagging with mechanical equipment located and operated so that no damage to the tubes results as evidenced in the 100 boilers referred to in the first part of this article.

In the six separately fired superheaters referred to, Columbium stabilized 18-8 stainless steel is used in the high temperature portion of these super heaters.

It is indicated that chromium-molybdenum steel alloys containing from 2 per cent to 9 per cent chromium, and .5 to 1.0 per cent molybdenum, when properly selected for the expected temperatures, are very satisfactory for use with metal temperatures up to 1200 degrees F. Above this temperature, it appears that the stabilized 18-8 stainless steel is satisfactory, and indications are that this material will be more extensively used in the future with the higher steam temperatures. (P. M. Brister — J.B. Romer of Babcock & Wilcox Co., New York 6, N. Y.)

\*

## Retreading Industrial Aprons

*Worn spots patched and entire fabric retreated with Neoprene-latex solution*

A retreading service for Neoprene-latex treated aprons is now being offered to industrial firms by a Columbus, Ohio, manufacturer. Most aprons wear or break through at just one or two places. This new process provides for patching the worn spots and then retreating the entire fabric with Neoprene such as this manufacturer uses in making new aprons. Aprons are again made serviceable for prolonged use.

The retread process is being applied to white and colored aprons as well as the standard black types. The country's industrial apron bill is estimated at \$25,000,000 which suggests the importance of the savings retreading may make possible. (Columbus Glove Mfg. Co., Columbus 9, Ohio)

Listed by Underwriters Laboratories, Inc., and Factory Mutual Laboratories.

## HIGH-VOLATILE LIQUID STORAGE NEEDS DEPENDABLE FIRE PROTECTION

Blaw-Knox Aquatomic Fog Nozzles have four features that assure dependable protection:

- 1 Non-clogging.
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JULY, 1947

## Ideas

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**STAINLESS TUBING**



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- High pressure service
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1/8" to 30" diameters  
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Finished to any degree

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Precision production  
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tolerances

TRENTWELD advantages are all inclusive, important to every user of austenitic stainless steel tubing. They are based on a singular automatic method of rolling and fusion welding that produces improved characteristics in the metal—an unusual uniformity in composition and structure. This increased capacity for service is further fortified by special conditioning for chemical use in precisely controlled annealing and pickling operations. Carbon content can be held as low as 0.02-0.03%.

Call on Trentweld engineers for help in determining the best alloy among stainless steels or Inconel to meet the need of your particular problem. Without obligation, address Dept. 22 on applications you have in mind, or write for the Trentweld Data Bulletin.

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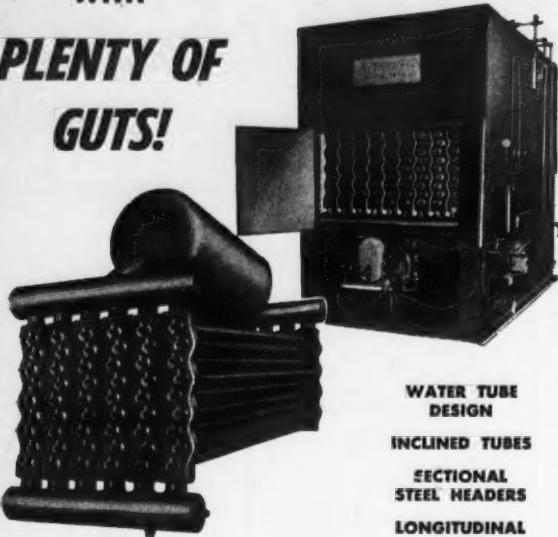
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East Troy, Wisconsin

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Page 55

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WITH**

**PLENTY OF  
GUTS!**



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**Steam is water plus heat.**

It is how that heat and water are utilized that makes a boiler good or bad. Now take a look at the guts of the Steamaster Boiler — the famed water tube principle, combined with sectional steel headers and inclined tubes gives you a superior design resulting in high thermal efficiency and economical maintenance . . . at no greater cost than an average so-called "packaged" boiler.

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Every tube immediately accessible. Just open the heavily insulated access doors.  
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Page 54

## New Literature

**Thermodynamics Tables Included in Catalog on  
Liquified Gas Handling, Unloading Plants**

A 12-page, paper-bound bulletin describes handling and unloading plants for liquefied gases. Equipment included is adaptable to ammonia, butane, propane, chlorine, carbon dioxide, other hydrocarbons and liquefied gases. Illustrated with installation photographs.

Close-ups present details of compressor and pump house liquid and vapor piping. Full-page flow sheets cover typical unloading units. Three pages of tabulated data showing thermodynamic properties of propane, butane, liquid ammonia. Size, construction details, buildings, equipment required, operation and manufacturer's facilities for making plant surveys are discussed. Some users of this equipment are indexed according to gases used. Catalog 1739 will be mailed on request.

**BLAW-KNOX DIVISION of Blaw-Knox Company, Dept. CP, Pittsburgh, Pa.**

When inquiring specify CP 1923 — see handy form pages 2-3

**8-Page Bulletin Analyzes Sizes, Proportions in  
Limestone Runs**

The speeding up and improving of stone crusher output with hammer mills and rolling ring mills is the theme of an eight-page, two-color bulletin, "Better Stone Crushing." Literature analyzes sizes and proportions found in a profitable, balanced limestone run.

Photographs show equipment and results. Text features capacities, rating, dimensions, regular and special crushing parts available in manufacturer's line of equipment. Some views of typical crusher installations are included. Copies of Bulletin 147 will be mailed on request.

**AMERICAN PULVERIZER COMPANY, Dept. CP, 1067 Mcklind Ave., St. Louis 10, Mo.**

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**20-Page Pamphlet is Complete Subject Index  
of "Philips Technical Review"**

A 20-page subject index of 445 lighting, electronics, x-ray and other technical articles appearing in "Phillips Technical Review," between January, 1936, and June, 1942, is available in handy pocket-size.

This is a complete alphabetical catalog of all material published, from Vol. 1, until suspension of publication during German occupation of Holland. Published by research laboratory of Phillips Lamp and Radio Works, Eindhoven, Holland. Requests for this literature should be addressed on inquiry slip or else to company named below.

**ELSEVIER BOOK COMPANY, INC., Dept. CP, 215 Fourth Ave., New York 3, N. Y.**

When inquiring specify CP 1925 — see handy form pages 2-3

**Oil Purifying Equipment Saves \$6000 Monthly**

How one company saved \$6,000 a month by using oil purification equipment is revealed in one of three case histories featured in manufacturer's eight-page quarter-

ly publication. Literature presents seven types of purifiers, clarifiers and sump cleaners, with illustrations and common applications. Case histories include:

(1) an aluminum plant which purifies oil in aluminum roll system; (2) a letter testifying to the effectiveness of oil purification on Diesel lubricating oil, and (3) a California plant which eliminated dermatitis by purifying cutting oils. Names and addresses of these users are given. Profusely illustrated and printed in two colors. Write for Vol. 3, No. 1 of "Clean Oil."

**HONAN-CRANE CORPORATION, Dept. CP, 922 Sixth St., Lebanon, Ind.**

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**Units for Difficult Mixing Jobs Described**

Intensive mixers for difficult and tenacious materials are diagrammed and illustrated in this 8-page bulletin.

Also featured is an internal mixer with milling or sheeting rolls directly beneath mixing chamber for receiving compounded or plasticized stock. Diagrams and operational photographs point out how mixing chamber is rotated to any position, including upside-down, within 180° limits for discharging, inspection, cleaning.

Manufacturer recommends for economical mixing, compounding, plasticizing and processing of plastics, natural and synthetic rubber, asphalt compositions, re-



**Post-War Design  
Hydroseal Pump**

Sixteen pages, crammed full of technical description and engineering data about all three types of Hydroseal Pumps:

SAND PUMP . . . (Materials, 100% minus ¼")  
SLURRY PUMP . . . (Materials, 100% minus 48 mesh)  
DREDGE PUMP . . . (Large and heavy materials, up to 6")

Performance tables of all eight standard sizes, with a capacity range from 10 G.P.M. to 12,000 G.P.M. Also, other useful tables and formula for selecting the correct Hydroseal for any pumping job, and a useful "How much money will it save me" graph. Entirely new, up-to-date information. Write for Catalog #547.

**The Allen-Sherman-Hoff Company, 1433 Locust Street, Phila. 2, Pa.**  
Representatives in Most Principal Cities.

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**CHEMICAL PROCESSING Preview**

claimed rubber, linoleum and floor tile compositions, paints, varnishes, enamels, lacquers. In capacities from 1 pt. to 275 gals. A table of standard sizes and ratings is included. Write for "Intensive Mixers."

STRUTHERS WELLS CORPORATION, Northmaster Division, Dept. CP, Titusville, Pa.

When inquiring specify CP 1928 — see handy form pages 2-3



#### 1947 Catalog of American Standards Ass'n. Lists 864 Approvals

864 standards approved for national use of industry by American Standards Association are listed in 24-page, 1947 booklet which includes pamphlet numbers and prices.

Standards listed include definitions of technical terms, specifications for metals and other materials, methods of work and of test for finished products, reaching into every important engineering field. These represent agreement by makers, sellers, users and regulatory groups as to best possible practices at time of approval. Safety and war standards listed separately as well as by industry. This literature (4701) forwarded on request.

AMERICAN STANDARDS ASSOCIATION, Dept. CP, 70 E. Forty-fifth St., New York 17, N. Y.

When inquiring specify CP 1929 — see handy form pages 2-3



#### Describe Tube Fittings, Valves and Tools in 76-Page Catalog

More than 1100 sizes, types and styles of tube, hose and brass pipe fittings, also shut-off valves, are described in a 76-page industrial catalog.

Literature also describes tubing cutters, flaring and swedging tools, tube benders, air nozzles, machinery cleaner, barrel faucet, welding, cutting and soldering equipment, fuel strainers, dash controls. A fitting selector chart shows 5 popular types of fittings, with assembly methods, applications, advantages.

Another helpful chart aids recognition of various brass fittings. Tube fittings listed are for use with copper, aluminum, steel and other thin-wall metal tubing in sizes from  $\frac{1}{8}$  to  $\frac{7}{8}$ " OD. Catalog 350 forwarded on request.

THE IMPERIAL BRASS MANUFACTURING COMPANY, Dept. CP, 1200 W. Harrison St., Chicago 7, Ill.

When inquiring specify CP 1930 — see handy form pages 2-3



#### 162-Page Text Discusses Plastics Lamination at Pressures of 0-15, and Up to 100 psi

"Low Pressure Laminating of Plastics" is a 162-page, cloth-bound text,  $6 \times 9\frac{1}{4}$ ". Certain thermosetting resins useable in the curing cycle at low pressures up to 100 psi are discussed, with emphasis on 0 to 15 psi pressure range.

Authors J. S. Hicks and R. J. Francis describe bonding materials utilizable under the prescribed conditions, cite sources of supply, discuss methods of use and reveal characteristics of the resulting products.

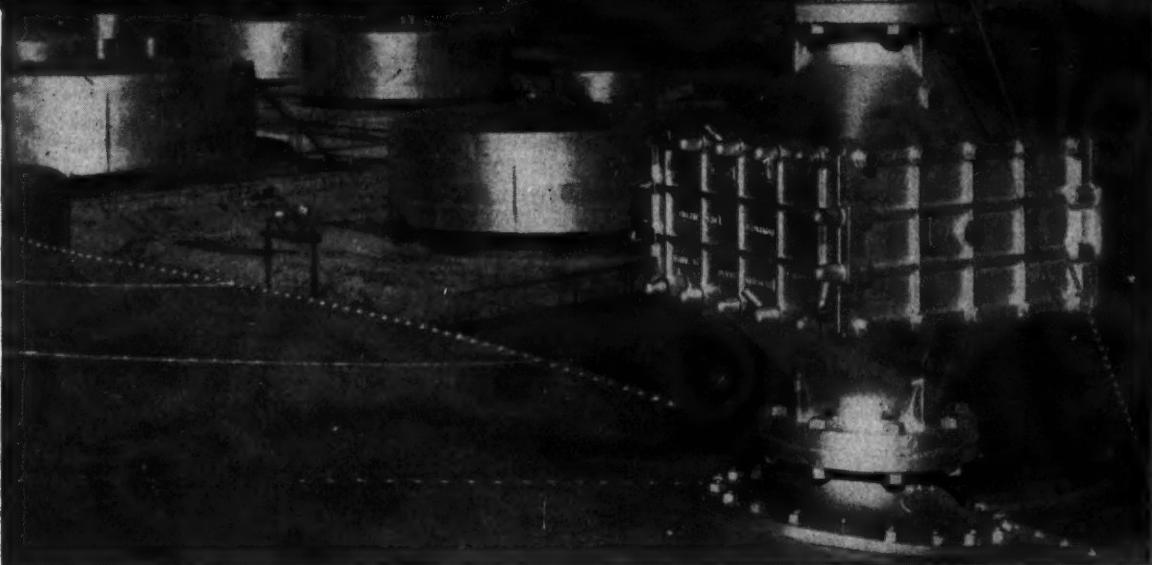
Fully illustrated and indexed. Price \$4.50. Remit direct to publisher, name below, or inquire on inquiry slip.

REINHOLD PUBLISHING CORPORATION, Dept. CP, 330 W. 42nd St., New York, N. Y.

When inquiring specify CP 1931 — see handy form pages 2-3

JULY, 1947

## GUARDIAN OF STORAGE TANK SAFETY



"Varec" approved Conservation Vent Unit — Fig. No. 58A — guards the vital petroleum products of one of the largest Canadian Refineries

"Varec" approved Conservation Vent Units are "Standard" in many refineries throughout the world. Ever on the alert to protect the vital resources of the petroleum industry, these units are the breathing apparatus of storage tanks. The valve is completely streamlined and is equipped with inside flame snuffer. Specially designed hyperbolic inner valves are less affected by kinetic energy of velocity flow as they operate at the predetermined true static pressure resulting in greater flow capacity with less "blow-down." These units are noncorrosive in most gases and impervious to the attack of sulphurous gases. They require less maintenance. There is less tendency to freeze. Tank Vent Area is always protected from fire. The conservation of valuable "light-ends" soon turns its cost into dividends. Fully listed by the Underwriters and the Associated Factory Mutual Laboratories, etc. Yes — truly these vent units are "guardians of Storage Tank Safety."

"Varec" Catalog, P-7, fully explains the operation of all "Varec" Equipment in detail with drawings, photographs, and tables showing various settings, pressures, flanges, etc., so that your needs may be determined at a glance. It is now available, and is yours by merely requesting it on your business letter-head.



THE PACE SETTER SINCE 1928

THE VAPOR RECOVERY SYSTEMS COMPANY  
COMPTON, CALIFORNIA, U.S.A.

Cable Address: VAREC COMPTON (all codes)  
NEW YORK CITY • CHICAGO, ILL. • CLEVELAND, O.  
HOUSTON, TEX.  
Agencies Everywhere



When inquiring specify CP 1932 . . . see information request blank, pgs. 2-3

# NATIONAL Welded Products

From OPEN HEARTH—STAINLESS—ALLOY and CLAD STEELS



Bubble Tower for Synthetic Rubber  
24" O.D. x 40' 0",  $\frac{1}{2}$ " Wall—100#  
Working Pressure. A.P.I.-A.S.M.E.

Suction Separator 450#  
Working Pressure— $\frac{1}{2}$ "  
Shell—A.S.M.E. Code—  
U-68 (Chemical).

Section of Pressure Vessel  
—48" O.D., A.S.M.E.  
Code U-68 (Chemical).

## MADE TO MEET MOST EXACTING CODES AND REQUIREMENTS

Fabricated equipment of most intricate design is precision built, under the watchful eyes of National's experienced engineers and master craftsmen—through forming, welding, stress relieving and machining operations, with constant X-ray and manual inspections. National's facilities are at your service, and our engineers will gladly work with you in solving your difficult fabricating problems.

**National**  
**ANNEALING BOX COMPANY**

API-ASME Codes • Stress Relieving • X-ray  
Pledged to Quality Since 1895  
WASHINGTON, PENNA.

- NATIONAL PRODUCTS
- Pressure Vessels
- Galvanizing Kettles
- Annealing Covers
- Tin Pots
- Salt Annealing Pots
- Wire Annealing Pots
- Special Plate Work

When inquiring specify CP 1933 — see handy form pages 2-3

## New Literature

### Synthetic Rubber Fire Hazards Subject of 36-Page Manual

"Fire and Explosion Hazards of the Manufacture of Synthetic Rubber" is a 36-page, paperbound manual and research report, size 6 x 9". Covers butadiene, styrene and buna S rubber. Includes five pages on fire-fighting equipment and the storage of flammable gases and liquids. Discusses manufacturing processes with reference to fire and explosion safe-guards.

A table covers properties of certain materials used in synthetic rubber manufacture. Text includes a nomenclature of terms used. Write for NBFU Research Report No. 4.

THE NATIONAL BOARD OF FIRE UNDERWRITERS, Dept. CP, 85 John St., New York 7, N. Y.

When inquiring specify CP 1934  
— see handy form pages 2-3

\*

### 1 1/4 to 4" Acid-Handling Pumps Described in Bulletin

A six-page, illustrated folder presents three sizes of acid-handling pumps for handling hot or cold acids and corrosive solutions. These are: 1 1/4, 2 and 4", direct or V-belt driven, capacities 5 to 1400 gpm., heads to 150', in various impeller diameters.

Shows two cross-sectional views of stuffing box detail. Literature discusses applications, corrosion-resisting materials, sizes and capacities, component parts, operational features, etc. A list of users with 10 or more pumps is appended. Request Bulletin 308-R.

OLIVER UNITED FILTERS, INC., Dept. CP, 33 W. 42nd St., New York 18, N. Y.

When inquiring specify CP 1935  
— see handy form pages 2-3

\*

### Water Conditioning Problems Discussed in Two Bulletins

Effective methods of removing iron, manganese and silica from water supply are described in two bulletins. Modern processes and types of equipment are explained, and diagrammatic drawings show principles of design. Literature will be sent on request. Refer to bulletins No. 6 and 7.

LIQUID CONDITIONING CORP.,  
Dept. CP, 423 W. 126th St., New York  
27, N. Y.

When inquiring specify CP 1936  
— see handy form pages 2-3



The important story of this radically simpler, more economical device for the continuous removal of condensate, air and non-condensable gases from steam lines. This advanced steam trap, with no moving parts is free of valves, bellows and floats.

The Coe Drainator Bulletin No. 903-B will prove of interest and value to you whether your trap problems concern paper machinery, water heaters, heating systems, process dryers, cookers, distilling equipment or laundry and dry cleaning equipment, etc.

Write for Bulletin 903-B

**THE COE MANUFACTURING CO.**  
503 BANK STREET • Painesville, Ohio

### DRAINATOR • THE ADVANCED STEAM TRAP

When inquiring specify CP 1937 — see handy form pages 2-3



## SPRACO NOZZLES

Write for NOZZLE CATALOG to  
**SPRAY ENGINEERING CO.**  
125 CENTRAL STREET • SOMERVILLE 45, MASS.

When inquiring specify CP 1938 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

## New Literature

### Flow Characteristics, Control Valve Capacities Shown in 34-Page Catalog-Manual

Diaphragm control valves for various pressures and services are fully described in a 34-page catalog and manual. A method of stating valve capacities and flow characteristics in terms of valve flow coefficient ( $C_v$ ) is explained, with graphs and tables.

Six types of flow plugs are illustrated, with their applications. Literature includes cut-out views of valve construction, with blue-print-type diagrams of sub-assemblies, parts. Lever motors and handwheel valves are included, also. Two pages of working pressure data for various valve bodies.

Handy gummed pad of 10 reproducible, detachable specification sheets is inserted in flap of inside back cover. Ring-punched, printed in two colors. Request Catalog V 2.

HAMMEL-DAHL COMPANY, Dept. CP, 243 Richmond St., Providence 3, R. I.

When inquiring specify CP 1939 — see handy form pages 2-3

\*

### Handbook Presents Technical Data on 12 Chlorinated Compounds

A 24-page technical booklet, "Organic Chlorine Compounds," presents latest data on 12 chlorinated compounds, industrially important as solvents, fumigants and chemical intermediates.

One of a series covering various groups of aliphatic organic chemicals. Contains information on properties and uses, specifications, solubilities, comparative stability to reducing and oxidizing agents, constant boiling mixtures. Charts show variation of certain properties with respect to temperature.

Bibliography is included. A useful reference source for research chemists, laboratory technicians. To obtain this literature, request Form 4769.

CARBIDE and CARBON CHEMICALS CORPORATION, Dept. CP, 30 E. 42nd St., New York 17, N. Y.

When inquiring specify CP 1940 — see handy form pages 2-3

\*

### "Rubber in Engineering" Is 267-Page Survey of Fundamental Properties

While primarily intended to furnish engineers with a survey of available information concerning fundamental properties of rubber, "Rubber in Engineering" contains several chapters on practical applications.

This 267-page book is presented in four parts, covering: (1) the rubber-like state, (2) general properties of rubber, (3) rubber technology, and (4) principles of the design of rubber engineering components. Part 4 includes factor of oil resistance in design, relative merits of compression and shear in design and shape factor, shock absorption and vibration insulation, designing the rubber component, and specifications.

Based on research by Imperial Chemical Industries, Ltd. Price, \$5.50. Remit direct to publisher, name below, or inquire on inquiry slip.

CHEMICAL PUBLISHING COMPANY, INC., Dept. CP, 26 Court St., Brooklyn, N. Y.

When inquiring specify CP 1941 — see handy form pages 2-3

JULY, 1947

# The SIDE of a V-BELT

is the ONLY Part that  
Even Touches the Pulley



Diagram of V-Belt  
in Sheave Groove

Naturally, it GETS the WEAR!

The moment you look at a V-belt in its sheave, you see that the sides are the only part that ever touch the pulley. The sides do all the gripping—they get all the wear against the sheave groove wall. The sides pick up the load. They transmit that load to the belt as a whole. And then, once more, the sides—and the sides alone—take hold of the driven pulley and deliver the power to it.

No wonder you have always noticed that the sidewall of the ordinary V-Belt is the part that wears out first.

### Now See How the Patented CONCAVE SIDE \*REDUCES Sidewall Wear—Lengthens Belt Life!

Clearly, since the sidewall is the part that wears out first, anything that prolongs the life of the sidewall will lengthen the life of the belt. The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the middle of the sides. They show also why the Patented Concave Side greatly reduces sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.



The CONCAVE SIDE  
is a GATES PATENT

Straight Sided  
V-Belt

Fig. 1

How Straight Sided  
V-Belt Bulges  
When Bending Around  
Its Pulley



Fig. 1-A

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Gates V-Belt  
with Patented  
Concave Sidewall

Fig. 2

Showing How Concave  
Side of Gates V-Belt  
Straightens to Make Per-  
fect Fit in Sheave Groove  
When Belt Is Bending  
Over Pulley



Fig. 2-A

No Bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt.

THE GATES RUBBER COMPANY  
DENVER, U. S. A.  
"World's Largest Maker of V-Belts"

**GATES VULCO DRIVES**  
ROPE IN ALL INDUSTRIAL CENTERS

**Gates**  
THE MARK OF  
SPECIALIZED RESEARCH

When inquiring specify CP 1942 . . . see information request blank, pgs. 2-3

Page 57

## New Literature

### List Recording, Controlling Instruments for Delivery from Stock

A four-page bulletin describes and illustrates examples of stock instruments for immediate delivery included in manufacturer's complete line of recording and controlling units for industrial processes. Specifications and applications are listed.

Literature covers recording thermometers, pyrometers, pressure gauges, voltmeters, ammeters, pH recorders, recording and indicating controllers, miscellaneous instruments and accessories. Bulletin W1811 forwarded on request.

THE BRISTOL COMPANY, Dept. CP, Waterbury 91, Conn.

When inquiring specify CP 1944 — see handy form pages 2-3



### Bulletin Describes Degaerating Heaters and Vacuum Degaerators

Degaerating heaters and vacuum degaerators are described, with flow diagrams, in a 4-page bulletin. Applications and principles of operation are outlined. Special advantages of manufacturer's designs are pointed out. Includes diagrams and explanatory data for both vertical and horizontal degaerating heaters. Bulletin 2 will be forwarded on request.

LIQUID CONDITIONING CORPORATION, Dept. CP, 423 W. 126th St., New York 27, N. Y.

When inquiring specify CP 1945 — see handy form pages 2-3



### Machine Drills or Taps Holes at Any Angle Without Changing Machine or Set-up

Three models of the Series 125 portable horizontal drilling and tapping machines are described and illustrated in 22-page booklet. Machine and electrical specifications are given for each model together with a two-page dimensional drawing. Operational view shows the various head positions possible. One page of the booklet is devoted to a description of the Model 700 indexing table.

Designed for use with this series of drilling and tapping machines, it can be used with other type of machine tools and for inspection or layout work. Literature is available on request.

KAUKAUNA MACHINE CORP., Dept. CP, Kaukauna, Wisc.

When inquiring specify CP 1946 — see handy form pages 2-3



### Seven Major Glycols Described in Detail

28-page booklet contains detailed information on the properties, specifications and uses of seven different glycols. Among the uses are anti-freezes, coupling agents, liquid coolants, resin intermediates, solvents, and humectants.

Included in the booklet are 30 charts which give such information as physical constants, comparative evaporation rates, and solubility data. 94 references are given for securing additional literature on the glycols. Booklet will be sent on request.

CARBIDE & CARBON CHEMICALS CORP., Dept. CP, 30 East 42nd St., New York 17, N. Y.

When inquiring specify CP 1946-A — see handy form pages 2-3



**Put CARDOX Fire Protection  
on Your Modernization Plans**

Let Cardox fire protection specialists study your hazards in the light of experience gained in engineering fire extinguishing systems now protecting many of the most severe hazards in American industry. The features that have made Cardox Systems so outstanding are many. By broadening the performance scope of carbon dioxide applied in pounds or tons, Cardox makes this non-damaging extinguishing medium equally effective for large or small hazards . . . gives it increased cooling effect; and uniform extinguishing characteristics regardless of atmospheric conditions. Write for Bulletin No. 1677.

**CARDOX CORPORATION** • Bell Building, Chicago 1, Ill.

When inquiring specify CP 1947 — see handy form pages 2-3

**Write for  
SUMMARIZED  
CATALOG  
OF EVERLASTING FASTENINGS**

Get this "key" to over 5,000 stock items . . . to the widest assortment of types and sizes of non-ferrous and stainless steel fastenings in America . . . bolts, nuts, screws, washers, rivets, nails and accessories made of brass, bronzes, copper, Monel metal, stainless steel and special alloys. Everlasting fastenings—manufactured and carried in stock by Harper—resist rust and corrosion . . . have other sterling properties. Write for summarized catalog today.

THE H. M. HARPER COMPANY  
2644 Fletcher St. • Chicago 18, Ill.  
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**HARPER**  
*Chicago*

**EVERLASTING FASTENINGS**

When inquiring specify CP 1948 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

**HIGH-VELOCITY  
EXHAUST FANS  
SPEED DRYING...  
REMOVE DUST**

Step-up speed and volume of air movement with Propellairs. Increase drying capacity; cut operating costs with these scientifically designed fans. *Highly efficient* Propellairs have airfoil-section blades—actually pull more air than they push—spread work evenly from hub to tip.

### SOLVES DUST PROBLEM

In rice-drying towers, such as the Farmers' Dryer, Alvin, Texas, shown above, dust removal has been an even greater problem than moisture dissipation. The roof installation of three Propellair Verti-Stacks, having a total capacity of almost 150,000 c.f.m., has proved a *truly effective* solution. Powerful exhaust action sweeps the tower clean of dust; removes moisture as fast as it is given up by the rice; shoots both moisture and dust high into the *outside* air.

### DIRECT-CONNECTED PROPELLAIR FANS



Each sturdy Verti-Stack includes a readily removable direct-connected Propellair fan. This type fan is also available for easy mounting in walls, windows, panels, ducts, and stacks. Sizes 12 to 60 inches diameter. Capacities to 88,000 c.f.m. Powered by fully enclosed, ball-bearing, heavy-duty Robbins & Myers electric motors. Write today for further information.

**PROPELLAIR**  
DIVISION OF ROBBINS & MYERS, INC.  
SPRINGFIELD • OHIO

When inquiring specify CP 1943 — see handy form pages 2-3

From paint



to perfume!

## Sperry FILTER BASES DO A BETTER JOB

Time means money in any manufacturing process... that's why an efficient operation is one that does the job perfectly in a minimum of time. Where filtration is required, in such widely divergent products as paint and perfume, the right filter base results in an efficient operation.

Sperry, in over 50 years of development and research in industrial filtration, has consistently produced the right filter base for each type of product. A wide range of standard and special bases, from simple filter papers and cloths to woven metals, is available now from Sperry.

Call on Sperry today for an analysis of your filtration problem. There's no obligation and you are assured a recommendation that will lead to efficient filtration in your plant.

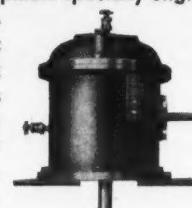
FILTER BASE DIVISION OF  
**D. R. SPERRY & CO.** BATAVIA, ILL.

When inquiring specify CP 1949 — see handy form pages 2-3



Years ago when mixing was largely guesswork and patience, NETTCO created a stir in agitating circles by developing new mixers that produced a more uniform product, faster, at less cost. NETTCO pioneered the idea of combining standardized NETTCO parts and units to build — at lower cost — agitating equipment specially engineered for the job. Glue, paint or clay mixing, shellac cutting, sulphonating, stock chest agitating and countless other mixing and blending operations have been constantly improved through the years by NETTCO engineers.

Write for Catalog.



Model WT  
Agitator Drive

**NEW ENGLAND TANK & TOWER CO.**

93 Tileston St., Everett 49, Mass.

When inquiring specify CP 1950 — see handy form pages 2-3

## New Literature

### Optical Benches, Accessories Subject of 24-Page Catalog

Optical benches and accessories are thoroughly treated in a 24-page, file-size bulletin. Punched for ring-binding. Literature covers benches of various degrees of precision and stability as well as numerous carriages for use with them.

Includes nodal slides, Foucault knife edge test equipment, lens and object holders, polarizing accessories, light sources and many other objects useful for both research and development, as well as inspection applications. A copy of bulletin 156-74 will be mailed on request.

THE GAERTNER SCIENTIFIC CORPORATION, Dept. CP, 1201 Wrightwood Ave., Chicago 14, Ill.

When inquiring specify CP 1951  
— see handy form pages 2-3

★

### Metal, Porcelain, Wood Finished With Portable Flexible Shafts

Power Drive flexible shafts for light, medium and heavy duty applications are presented in a four-page, illustrated bulletin. Said to be useful wherever constant power in a portable tool is required.

Equipment is described as offering greater opportunity for use in all types of metal, plastics, porcelain or woodwork, especially finished operations. A high speed, light weight, flexible shaft kit for wide range and quick speed changes is shown and described. Form 289 is mailed on request.

F. W. STEWART MFG. CORPORATION,  
Dept. CP, 4311 Ravenswood Ave., Chicago  
13, Ill.

When inquiring specify CP 1952  
— see handy form pages 2-3

★

### Proper Use of Fire-Fighting Devices Discussed in Illus- trated Booklet

"What You Should Know About Modern Fire-Fighting Devices" is subject of a 24-page illustrated booklet. Anti-freeze extinguishers and engines resist temperatures as cold 40° F. below zero. Floodlighting equipment for night fire fighting is described. Detailed chart suggests correct extinguisher for different types of fires. Booklet sent on request.

AMERICAN - LaFRANCE - FOAMITE CORP., Dept. CP, Elmira, New York.

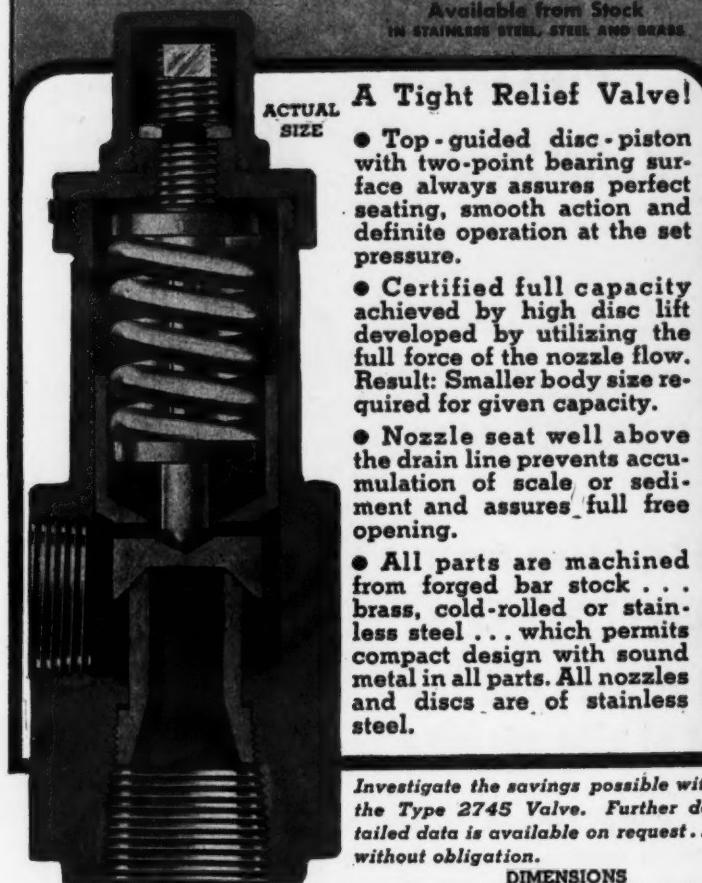
When inquiring specify CP 1953  
— see handy form pages 2-3

## HIGH CAPACITY LOW COST SMALL NOZZLE-RELIEF VALVES

For Pressures to 10,000 psi.

Available from Stock

IN STAINLESS STEEL, STEEL AND BRASS.



### A Tight Relief Valve!

- Top-guided disc-piston with two-point bearing surface always assures perfect seating, smooth action and definite operation at the set pressure.
- Certified full capacity achieved by high disc lift developed by utilizing the full force of the nozzle flow. Result: Smaller body size required for given capacity.
- Nozzle seat well above the drain line prevents accumulation of scale or sediment and assures full free opening.
- All parts are machined from forged bar stock . . . brass, cold-rolled or stainless steel . . . which permits compact design with sound metal in all parts. All nozzles and discs are of stainless steel.

Investigate the savings possible with the Type 2745 Valve. Further detailed data is available on request... without obligation.

#### DIMENSIONS

Size in.	Nozzle Area sq. in.	Max. Pres. psi.	Overall Height in.
1/2	0.077 0.019	2000 10000	5 1/4
1/4	0.077 0.019	2000 10000	5 1/4
1	0.250 0.045	2000 10000	6 1/4

FARRIS ENGINEERING CORP.  
406 Commercial Ave., Palisades Park, N. J.

2 NOZZLE SIZES  
FOR EACH BODY SIZE.

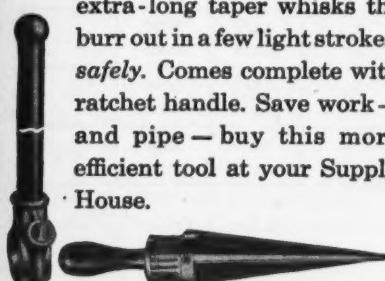


When inquiring specify CP 1954 — see handy form pages 2-3

# Long-Tapered FOR SAFE, QUICK PIPE REAMING

**Extra-long-taper  
RIDGID**  
**takes work and risk  
out of pipe reaming**

• No thinning of pipe or conduit, no flaring or splitting it, even when you ream it extra fast—as this RIDGID encourages you to do. That extra-long taper whisks the burr out in a few light strokes, *safely*. Comes complete with ratchet handle. Save work—and pipe—buy this more efficient tool at your Supply House.



Reamer unit sold  
alone for use in  
RIDGID No. 00R  
Ratchet Threader  
handle.

# RIDGID

**WORK-SAVER PIPE TOOLS**  
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

When inquiring specify CP 1955 — see handy form pages 2-3

Page 60

## New Literature

Open-Type Induction Motors are  $\frac{1}{2}$  to 20 hp., 600 to 3600 rpm.

Open-type induction motors are described in a notebook-punched, four-page bulletin. Fully illustrated. Literature covers protected frame sizes 203 to 326, with hp. ratings from  $\frac{1}{2}$  to 20, 600 to 3600 rpm.

Details, including all-steel frames, welded cores, aluminum pressure-cast rotors, precision bearing mount, are described. Thirteen-step insulation treatment for Class A (40, 50 and 55° C. temperature rise) and Class B (70 and 75° C. rise) motors is detailed. Special modifications for vertical, flange, footless and shaftless mounting, also 25-cycle design, are covered. Bulletin C-118 will be mailed on request.

THE RELIANCE ELECTRIC and ENGINEERING COMPANY, Dept. CP, 1076 Ivanhoe Road, Cleveland 10, Ohio.

When inquiring specify CP 1956 — see handy form pages 2-3

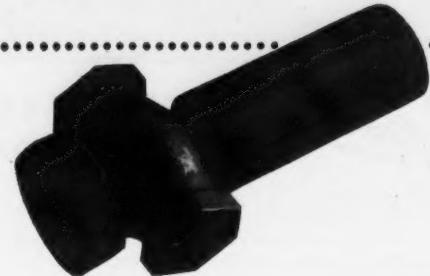


### Mold Polishing Service Removes Pits, Scratches, "Lemon-peel" and Tool Marks

How polishing techniques developed in the production of quartz and glass optical flats, gages, seal rings, etc. have been modified and applied to plastic molds is described in a four-page folder. Mold imperfections are removed, leaving a surface which is metallurgically clean. Deep tool marks and gross defects are removed.

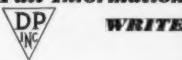
The surface is cleaned up in the lapping operation, and a chrome plating is applied if desired. Illustrations of several molds are shown together with detailed information.

**Close the Gap...  
BETWEEN MINIMUM AND OPTIMUM  
PERFORMANCE WITH SOLENOID  
HIGH VACUUM VALVES**



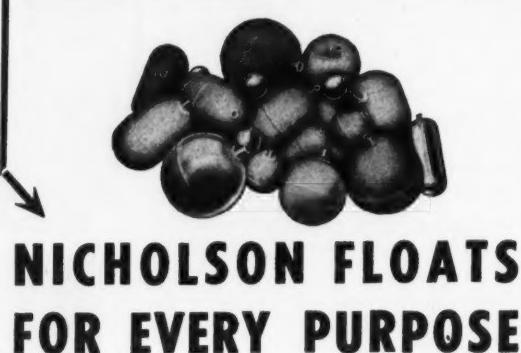
• New DPI High Vacuum Solenoid Valves give instant control over high vacuum systems • Save time and effort by eliminating manual controls • Ideal in manufacture of refrigerator units ... with trolley exhaust systems and rotary machines.

For Full Information



Vacuum Equipment Division  
DISTILLATION PRODUCTS, INC.  
Rochester 15, N. Y.

When inquiring specify CP 1958 — see handy form pages 2-3



In a new plant, we employ latest methods in producing welded floats for operating mechanisms and as H.P. storage vessels; wide range in metal, buoyancy, pressure. Nicholson floats are standard with hundreds of equipment makers.

Bulletin 746

### PROMPT DELIVERY IN:

- Types for external and internal pressure applications.
- 10 standard shapes.
- 10 standard connections.
- Metals: Steel with chromium, cadmium or copper plating; Stainless Steel; Monel.
- Sizes: 2" to 14" diam.
- Pressures to 3,000 lbs.

W. H. NICHOLSON & CO.

Traps • Floats • Steam Specialties

181 OREGON ST.  
WILKES-BARRE, PA.

When inquiring specify CP 1957 — see handy form pages 2-3

Maximum protection, maximum resistance — that's every user's verdict of Surety Sureseal Synthetic rubber aprons and sleeves. Many styles and sizes. Write for factual bulletin.

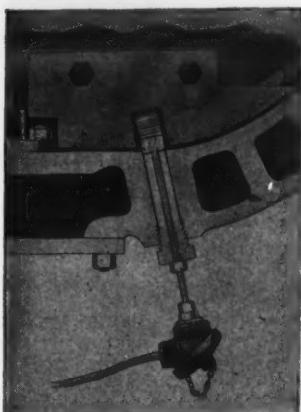
### FAMOUS SURETY QUALITY

THE  
**SURETY**  
CARROLLTON, OHIO  
RUBBER CO.

When inquiring specify CP 1959 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

## DOPP KETTLES



Positive temperature control of your product during processing

Dopp Kettles are available with patented thermocouples which indicate accurate temperatures of the material, regardless of the temperature of the kettle wall. This insures positive control of all production cycles. It is particularly valuable in the treatment of heat-sensitive products with critical operating temperatures.

## BUFOVAK EQUIPMENT

Division of Blaw-Knox Co.  
1645 Fillmore Ave., Buffalo 11, N.Y.

When inquiring specify CP 1960 — see handy form pages 2-3



Rex "Super-Service" Vibra-Sorber

**TOUGH PROBLEMS  
OFTEN HAVE  
SIMPLE ANSWERS...**

- When vibration is inducing noise or material fatigue, a Rex "Super-Service" Vibra-Sorber can be a simple answer.

Rex Vibra-Sorber units are readily adaptable to a wide range of services. They are in common use with highly searching liquids and gases, at elevated pressures and temperatures, and are available in sizes from 3/16" I.D. to 4" I.D.

Write for Vibra-Sorber Bulletin VS-2 and for further details on units to meet your specific problems.

Flexible Metal Hose for Every Industrial Use

**CHICAGO METAL HOSE CORPORATION**  
MAYWOOD, ILLINOIS  
Plants: Maywood and Elgin, Ill.

When inquiring specify CP 1961 — see handy form pages 2-3

JULY, 1947

## New Literature

mation and technical data. Molders are invited to send in a trial order — a mold which is rough machined, partially finished, or worn through use. It will be returned promptly, free of blemishes and billed at regular rates. A copy of the folder will be sent on request.

ACME SCIENTIFIC CO., Dept. CP, 1448 W. Randolph St., Chicago 7, Ill.

When inquiring specify CP 1962 — see handy form pages 2-3

\*

### Electric Vacuum Pumps — 0" to 27"

Single-sheet bulletin illustrates and describes a portable electric vacuum pump. This is a quiet operating water-jet pump with no close tolerances to wear. When tank is filled with water and connection is plugged into electric socket, pump is ready for operation with 28" hg shut-off vacuum. The bulletin lists two units: — 1/2 HP — 2 CFM — 0 to 27" Vacuum; 1 HP — 4 CFM — 0 to 27" Vacuum. Both units for AC 110/220 volt, single phase only. The "HandiVac" pumps may be equipped at slight cost to serve as isometric compressors developing 25 psi. The units are especially suited for laboratories, pilot plants and for some industrial applications. Literature forwarded on request.

WHITTINGTON PUMP & ENGINEERING CORP., Dept. CP, 245 South Meridian St., Indianapolis, Ind.

When inquiring specify CP 1963 — see handy form pages 2-3

\*

### Influence of Minor Elements on Metals at High Temperature Told in 14 Pages

"The Influence of Minor Elements on the Heat Resistance of Standard Alloys" is a 14-page technical manual. Translated from German, this literature was not previously available in English.

Ten tables and charts indicate durability of various alloys at high temperatures, as affected by additions of certain elements. Metals thus treated include iron-free chrome nickel and alloys, chrome nickel containing iron, 30% chrome iron, etc. Influence of carbon on durability of chrome-aluminum-iron alloy is discussed.

Author: W. Hessenbruch. Released by permission of Alien Property Custodian. Literature forwarded on request.

CERIUM METALS CORPORATION, Dept. CP, 522 Fifth Ave., New York 18, N.Y.

When inquiring specify CP 1964 — see handy form pages 2-3

\*

### Folder Describes New Resin for Varnish, Quick Bodying of Soft Oils

Durez 240, a resin of high melting point for rapid bodying of soft oils and making varnishes which dry to "full, rich gloss, with good flexibility," is the subject of a four-page technical folder.

Literature lists physical properties, briefly describes a series of resins of which this is the newest, and describes applications of Durez 240 with relation to varnishes, alkyl resins, printing ink vehicles and emulsion waxes. "Durez 240 Resin" forwarded upon request.

DUREZ PLASTICS & CHEMICALS, INC., Dept. CP, North Tonawanda, N.Y.

When inquiring specify CP 1965 — see handy form pages 2-3

*Extra-Handy*

## THREADERS FOR SMALL PIPE



Fast, efficient little

**RIDGID Nos. 00R and 111R  
for threading 1/8" to 1 1/4" pipe**

- No slow complicated get-ready with these extra-handly small RIDGID threaders. You snap the die heads in easily from either side — can't fall out. You need no special dies for close-to-wall threads. Clean accurate threads always from heat-treated tool-steel dies. No. 00R, 1/8" to 1" — No. 111R, 1/8" to 1 1/4". Ask for these efficient durable threaders at your Supply House.



Handy free carrier  
for any group of sizes.

**RIDGID**

**WORK-SAVER PIPE TOOLS**  
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

When inquiring specify CP 1966 — see handy form pages 2-3

Page 61

# There's an Alsop "Hy-Speed" Mixer for every liquid processing job



Whether your problem is mixing, blending, suspending, or dissolving, you can handle it simply and economically with an Alsop "Hy-Speed" Mixer.

Our complete line of Mixers include the portable and fixed types in a wide variety of propellers and capacities.

Fixed Side-Entering Agitators are available for thorough mixing in large tank applications. Our Bulletin No. 745 contains complete information.

**ALSOP**  
ENGINEERING CORPORATION  
*Filters - Filter Discs & Sheets - Mixers - Agitators*

207 Alsop Square, Milldale, Conn.

When inquiring specify CP 1967 — see handy form pages 2-3

**YES!**  
**RUBBER MATS**  
can be successfully bonded to  
**PAINTED METAL**  
with **MULTI-LOK\*** adhesive

MULTI-LOK is a synthetic rubber base adhesive. It will bond an exceedingly wide range of diverse materials and surfaces — including many that have never been bonded before. Will MULTI-LOK bond all things to all things? Certainly not! No one adhesive will. MULTI-LOK is new. We're extending its use slowly. We're working out each application with laboratory attention to all details. We're ready to match our time with yours in solving your particular problem.

Address: 268 Madison Ave., New York 16; 3641 So. Washtenaw Ave., Chicago 32; 735 Battery St., San Francisco 11; and other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto. In England: National Adhesives, Ltd., Slough. (\*Reg. applied for)

**National**  
ADHESIVES

EVERY TYPE OF ADHESIVE FOR EVERY INDUSTRIAL USE

When inquiring specify CP 1968 — see handy form pages 2-3

## New Literature

### More Than 10,000 Radio, Electronic Products Covered by 164-Page, Indexed Catalog

More than 10,000 radio and electronic products are included in a 164-page indexed catalog. Public address and inter-communication systems are listed for indoor and outdoor use, with ready-to-install systems for a variety of industrial applications. Special listings of high-fidelity sound equipment are featured.

Electronic sound equipment section includes wide listing of microphones, speakers, etc. Other listings cover fluorescent lighting, communication-type receivers, photo-electric cell equipment, electronic tubes, test instruments, transformers, resistors, condensers, rheostats, relays, switches, rectifiers, tools, wire and cable, batteries, sockets, generators, equipment for experimental work. Catalog 112 forwarded on request.

ALLIED RADIO CORPORATION, Dept. CP, 833 W. Jackson Blvd., Chicago 7, Ill.

When inquiring specify CP 1969 — see handy form pages 2-3

### 48-Page Catalog Covers Boiler Units, Heaters, Pulverizers, Refractories

Power plant and processing equipment of many kinds is shown and described in a four-color, 48-page catalog. Equipment includes complete boiler units, various types of boilers, heaters, furnaces, stokers, burners including pulverized coal and pulverized-coal-burning systems, pulverizers for coal or cement plants.

Also covers pulverized-coal feeding and transporting equipment, driers, refractories and refractory products, process equipment including castings, forgings and tubular products. Profusely illustrated with work diagrams, photographs, cut-aways. Condensed catalog G-2-B forwarded on request.

THE BABCOCK & WILCOX COMPANY, Dept. CP, 85 Liberty St., New York 6, N. Y.

When inquiring specify CP 1970 — see handy form pages 2-3

### Bulletin Describes "Poured" Joints, Rubber Ring Packing for Bell and Spigot Pipe

A method of jointing bell and spigot water pipe is described, with pictures, in an 8-page bulletin.

Products described include "Mineralead," a pure sulphur plasticized with synthetic rubber, for jointing bell and spigot water mains, and "Hydro-Ro Ring," a rubber ring packing substitute for jute or oakum in cast iron bell and spigot pipe joints. Mineralead joints are described as requiring no caulking.

A series of photographs illustrate method of applying, with a cross-sectional view of finished results. Includes tables and written directions. Accessory ladies, heaters and pipe joint runners are shown. Literature forwarded on request.

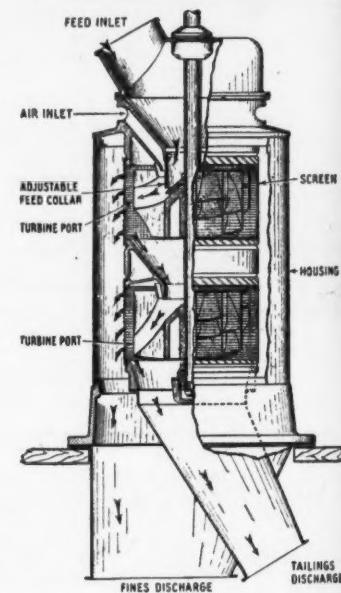
THE ATLAS MINERAL PRODUCTS COMPANY, Dept. CP, Mertztown, Pa.

When inquiring specify CP 1971 — see handy form pages 2-3

### Solvents Technical Manual Presents Facts on 9 Glycol-Ethers

A 24-page solvents technical manual presents in detail the important properties, specifications, uses and constant boil-

**CENTRIFUGAL HIGH SPEED SIFTING**  
**Produces Cleaner, Faster Separation**  
**Eliminates Shaking**  
**Saves Space**  
**Saves Power**  
**For Any Material**  
**— Any Mesh**



Operating at high speed on the turbine principle, the Abbe-Blutergess Sifter diffuses the material through turbine ports centrifugally against a cylindrical screen through which the "fines" pass, leaving the "tailings" to drop for resifting, if desired. No shaking, vibration or brushes are necessary; no clogging of screen or "balling" up of material.

Any material to 300 mesh can be sifted with minimum power, labor and space. Users report from 2 to 5 times faster sifting than with other machines. Built in sizes to handle from 30 to 10,000 lbs. of material per hour. Operation with an Abbe-Blutergess makes sifting profitable instead of costly and troublesome.

**ABBE-BLUTERGESS  
TURBINE SIFTER**

Get Bulletin 52  
**ABBE ENGINEERING CO.**  
46 Church St. • New York 7, N.Y.

When inquiring specify CP 1972  
— see handy form pages 2-3

**I WAS CUT IN  
5 SECONDS  
WITH A  
CLIPPER**

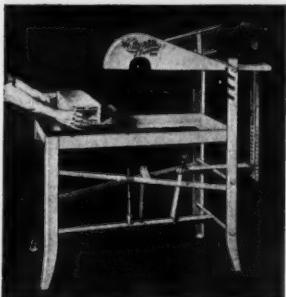
*Yes... YOU CAN CUT SILICA  
BRICK IN 5 SECONDS WITH  
A CLIPPER MASONRY SAW*

### 'TAILOR-MAKE' SPECIAL SIZES

#### THE SPEED AND ECONOMY IS AMAZING!

You can easily cut any masonry material with Clipper Masonry Saws... Clay, Concrete, Magnesite, Silimanite or Acid Resistant Brick.

Write for latest Catalog.



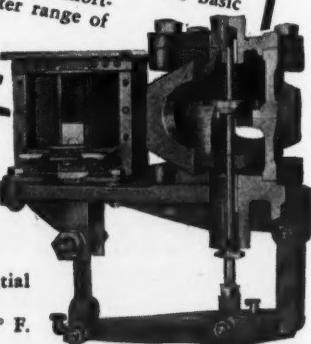
**CLIPPER MFG. COMPANY**  
2800 WARWICK, KANSAS CITY 8, MO.

When inquiring specify CP 1973 — see handy form pages 2-3

#### NEW—Direct Acting Solenoid Valve for 150 lbs. Differential Pressure . . .

That's the biggest news about the new Johnson Solenoid Valve. Some sizes will operate under differential pressures up to 150 lbs., without pilot valves. All sizes end the time lag and wiredrawing valves. All that come with slow opening—the danger of clogging that comes with auxiliary pistons. Whatever your liquid level or flow control problems, investigate the new possibilities this Johnson design brings to solenoid valves. It offers all the basic advantages, with none of the shortcomings, for a far greater range of applications.

GET ALL THE FACTS  
Write for new bulletin



#### WHERE CAN YOU USE THIS AUTOMATIC VALVE?

- Immediate full flow
- No pilot valves
- Up to 150 lbs. differential pressure
- Temperature to 365° F.

**The Johnson Corporation**

826 Wood St., Three Rivers, Mich.

When inquiring specify CP 1974 — see handy form pages 2-3

### New Literature

ing mixtures of nine glycol-ethers for soluble oils, wood stains, lacquers, printing inks, dye pastes and hydraulic fluids.

Literature includes a series of charts covering physical constants, comparative evaporation rates, various solubilities and other information. Lists 52 references to glycol-ethers in technical literature. One of a series of publications describing chemicals in the important aliphatic groups. Form 4765 will be forwarded on request.

CARBIDE and CARBON CHEMICALS CORPORATION, Unit of Union Carbide and Carbon Corporation, Dept. CP, 30 E. 42nd St., New York 17, N. Y.

When inquiring specify CP 1975 — see handy form pages 2-3

#### Compare Carbon Blacks in Technical Data Sheets

Two series of data sheets comparing Continenx HMF with other carbon blacks are available.

Series 1 gives relative values for Continenx HMF, 3 other HMF-type blacks, Continenx SRF and FF-type black, Continental AA (EPC). Of this series, Fig. I shows order of decreasing tensile strength; Fig. II plots abrasion loss figures; Fig.'s III and IV show laboratory extrusion rate and Williams plasticity values, giving some indication of processing behavior, and Fig. V plots tensile, tear and abrasion loss against loading.

Second series compares Continenx HMF with other gas-type HMF carbon black at 40, 80 and 120 parts loading. Write for "Technical Service Report."

WITCO CHEMICAL COMPANY, Dept. CP, 295 Madison Ave., New York 17, N. Y.

When inquiring specify CP 1976 — see handy form pages 2-3

#### Tabulate Chemical Composition of Foods in 156-Page Handbook

Tabulated analyses of all common materials used for human food are presented in a 156-page, pocket-size handbook. Stated in grams per 100 grams and grams per oz.

Composition of various prepared foods made from a stated recipe is given. Includes data concerning losses due to cooking, also absorption of foods by the body. Cloth bound. Second American edition, revised. Title, "The Chemical Composition of Foods." Authors, R. A. McCance and E. M. Widdowson. Price \$3.75. Remit direct to publisher, name below, or inquire on inquiry slip.

CHEMICAL PUBLISHING COMPANY, INC., Dept. CP, 26 Court St., Brooklyn, N. Y.

When inquiring specify CP 1977 — see handy form pages 2-3

#### Leaflets Define Buffing and Polishing Operations

Buffing and polishing operations and equipment are described in two new bulletins. Wheel speed table shows method of estimating surface feet per minute from RPM for wheels from 4" to 24" in diameter. Bulletin also describes and illustrates 8 different wheel hubs available and explains use of balancing tubes which can be installed in polishing wheels. Descriptive literature will be sent on request.

DIVINE BROTHERS CO., Dept. CP, Utica, New York.

When inquiring specify CP 1978 — see handy form pages 2-3

## THE WHOLE STORY



As all production men know, initial performance doesn't tell the whole story on a chemical pump. It's how that pump stands up under hard continuous operation that counts—and that's how the LaLabour Type Q earned its reputation.

Notice, in the exploded view shown, the simple construction of this open impeller pump. In initial operation, the Type Q is as efficient as other pumps whose performance depends on tightly fitting parts. But because the Type Q operates without dependence on close clearances, efficiency is maintained even after long service with corrosive or abrasive liquids. Naturally, that means continuous high production, with a minimum of wasteful down time.

In addition, although the LaLabour Type Q is rated as a non-priming pump, actually it can handle up to 20% air or vapor mixed with liquid without binding. For the whole story on the LaLabour Type Q, supported by actual case histories, write us today.



**IF YOU NEED A LABOUR NOTHING ELSE WILL DO**

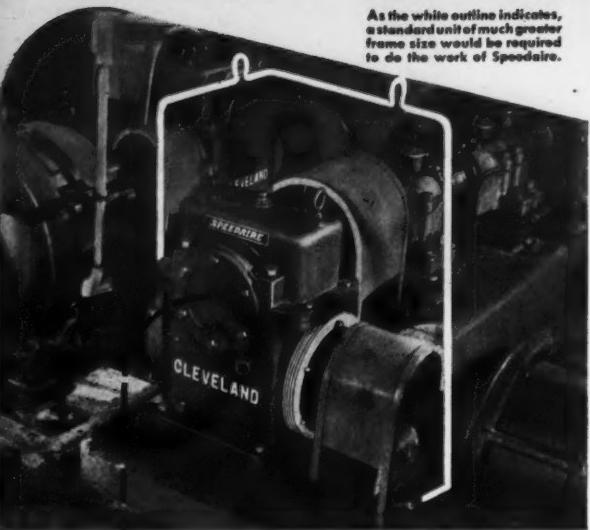


**CENTRIFUGAL PUMPS**

**THE LABOUR COMPANY, Inc.**

Elkhart, Indiana, U. S. A.

When inquiring specify CP 1979 — see handy form pages 2-3



As the white outline indicates, a standard unit of much greater frame size would be required to do the work of Speedaire.

## SPEEDAIRE twins save space, reduce weight, cut cost \$385

THESE two Speedaires are installed in the northern New York mill of a well-known paper company. The reducer in the foreground drives a paddle wheel circulating hot-pond water; the other drives a chain conveyor bringing rough wood into the hot pond.

In operation over a year, the Speedaires are completely satisfactory. As is apparent from this photograph, they saved valuable space, permitting motors and drives to be grouped more closely. Load on the floor was reduced 1300 pounds (Speedaire's weight is less than half that of a conventional worm-gear reducer) and cost saving was \$192.50 per unit.

Speedaire is Cleveland's new fan-cooled worm-gear speed reducer. Because it is fan-cooled, Speedaire will do more work—will deliver up to double the horsepower of standard worm units of equal frame size, at usual motor speeds. It can be installed economically on many applications where other types have been used heretofore—giving you the advantages of a compact right-angle drive. Speedaire gives the same long, trouble-free service characteristic of all Clevelands.

For full description, send for Catalog 300. The Cleveland Worm & Gear Company, 3257 East 80th Street, Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.

**CLEVELAND**  
Worm Gear  
*Speed Reducers*

When inquiring specify CP 1980 — see handy form pages 2-3

Page 64

## New Literature

### Master Tables Aid Selection of Boiler Feed Pumps, Condensate Return Units

Manufacturer's complete line of condensation return units and boiler feed pumps is described, with illustrations and related diagrams, in a 24-page bulletin.

Master Selection tables simplify choice of proper unit for practically any individual set of conditions. For example, these tables list rated amount of condensation produced for varying areas of radiation, and equivalent boiler hp; boiler pressure against which unit is to operate; equivalent psi pressure between boiler water level and pump, also other factors essential to proper selection of unit.

Includes detailed information on each unit. Bulletin CR-1 will be forwarded on request.

THE DEMING COMPANY, Dept. CP, Salem, O.

When inquiring specify CP 1981 — see handy form pages 2-3

\*

### Continuous Metering of Dye Bath Strength Explained in Technical Manual

A 16-page, illustrated technical manual describes uses, construction and operation of the Dyeometer, an instrument for continuous photometric measurement of dye bath strength during dyeing.

Literature explains how the Dyeometer controls surrounding atmosphere, temperature, volume and circulation of bath, motion of material being dyed, and other factors which are thought to influence the dyeing process.

Dyeometer and mill dyeing data are compared. Uses of Dyeometer in studying vat reduction rates and determining rates of chromation, are discussed. Dye curves are charted. Tabulated reduction data on Calco vat colors at 200° F. is presented. Bulletin 792 forwarded on request.

AMERICAN CYANAMID COMPANY, Calco Chemical Division, Advertising Dept., Dept. CP, Bound Brook, N. J.

When inquiring specify CP 1982 — see handy form pages 2-3

\*

### Dust Controllers for Isolated Machines Described and Shown in Bulletin

Self-contained dust control units for use around isolated machines, or buildings not served by a central dust control system, are the subject of a 4-page, illustrated bulletin.

Features and flow-stream of the unit are shown in a large cut-away drawing. Mechanical operation, specifications and applications are given. Dimensions are presented by diagram. Literature includes photographs.

Unit is described as having 900 cfm air volume at 2" suction with 4 cu. ft. storage compartment and capacity for four 3", two 4" or one 6" pipe connections. "Self-Contained Dust Control Units" will be sent on request.

THE KIRK AND BLUM MANUFACTURING COMPANY, Dept. CP, 2833 Spring Grove Ave., Cincinnati 25, Ohio.

When inquiring specify CP 1983 — see handy form pages 2-3

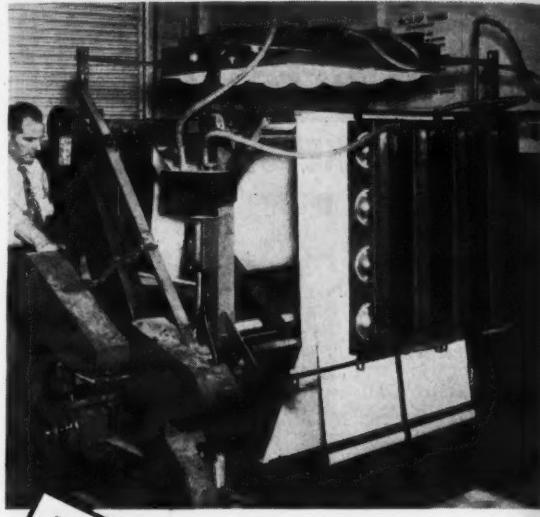
\*

### Pyrometers for Diesel Exhaust Temperatures, General Industrial Use, Fully Described

Heavy duty pyrometers for measuring Diesel engine exhaust temperatures and for general industrial use are illustrated and discussed in a 16-page bulletin.

Types shown include both single and multi-circuit, units for air preheaters, superheaters, heat treating furnaces, oil

## HOW 5,000 PLANTS CUT COSTS



Typical Example of Savings with INFRA-RED

1100% FASTER—W. J. Voit Rubber Co., Los Angeles, dries rubber cement toasting on top stock in 15 seconds using EVENRAY. A machine, equipped with Infra-red, produces in four hours with one attendant the same amount of stock formerly requiring 3 persons each on a 2-shift day.

### ONLY FOSTORIA EVENRAY EQUIPMENT HAS ALL THESE ADVANTAGES

1. Lower Unit Operating Cost—Greater efficiency of gold reflectors requires lower connected load—provides maximum utilization of energy.
2. More Uniform Coverage—Evenray equipment design gives extraordinarily even distribution of energy on products being processed—as little as 2% variation.
3. Maximum Temperature Range—Delivers up to 125 BTU's per square inch per hour. Accommodates from 80 watt to 1000 watt lamps for fastest processing according to job requirements.
4. Maximum Energy Utilization—Two-wall oven construction and gold interior reflecting surface provide most effective insulation; it puts the energy on the product.
5. Complete Line of Equipment—Evenray models are available for spot heating or full ovens, utilizing clear or reflector type lamps; permitting a choice for best results depending on nature of product to be processed. Flexibility of construction permits quick and easy alteration or addition for production changes.
6. Approved Electrical Construction—Listed under Re-examination service of Underwriters' Laboratories, Inc.



Fostoria invites your request for analysis of any baking, drying, dehydrating or pre-heating problem.  
Write for Literature  
Ask for brochure EV-1146 which pictures and describes many applications with Evenray Systems.

### THE FOSTORIA PRESSED STEEL CORP., FOSTORIA, OHIO

In Canada—Amalgamated Electric Corp., Ltd., and Northern Electric Branches

When inquiring specify CP 1984 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

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JULY

## New Literature

quenching tanks, cyanide pots, bake ovens, die casting machines, feed water heaters, condensers, etc. Diagrams supplement descriptions of various types. A page is also devoted to resistance thermometers and an instantaneous, direct-reading air velocity meter.

A request will bring Bulletin 4361.

ILLINOIS TESTING LABORATORIES, INC., Dept. CP, 420 N. LaSalle St., Chicago 10, Ill.

When inquiring specify CP 1985 — see handy form pages 2-3

\*

### 7000 Barrels of Liquefiable Products Recovered Per Day in Cycling Plant

32-page booklet illustrates equipment used in cycling plant to increase the productive life of an oil field. Booklet describes how stripped gas is injected back into the reservoir to maintain pressure and keep the oil deposit from disintegrating. Four-color flow sheets shows the various stages required in processing the well gas and condensate. Major items of plant equipment are illustrated together with brief descriptions of their operation and performance. Reference is made to paper presented before California Natural Gasoline Association giving a detailed discussion of the processing. Brochure is available on request.

FLUOR CORP. LTD., Dept. CP, 2500 South Atlantic Blvd., Los Angeles 22, Calif.

When inquiring specify CP 1986 — see handy form pages 2-3

\*

### Circulars Describe Guards for Punch and Kick Presses

Guards for punch and kick presses are described in two illustrated circulars. One describes "Safe-Sweep," which attaches to ram head of punch presses. Features stressed include light weight, no power drain, starts and stops at any point, adjustable for left hand operation, and various settings possible.

Other circular describes "Safe-Kick" guard for kick presses. Both units are fully adjustable, and for various dimensions. Either, or both circulars, forwarded on request.

ALL AMERICAN SAFETY EQUIPMENT COMPANY, Dept. CP, 11 S. LaSalle St., Chicago 3, Ill.

When inquiring specify CP 1987 — see handy form pages 2-3

\*

### "Butalastic Polymers" is 642-Page Treatise on Synthetic Rubbers

A 642-page treatise on synthetic rubbers is entitled "Butalastic Polymers." Subject matter includes source and production of monomers, mechanism and processes of polymerization, processing and industrial applications of butalastics, properties of various butalastics.

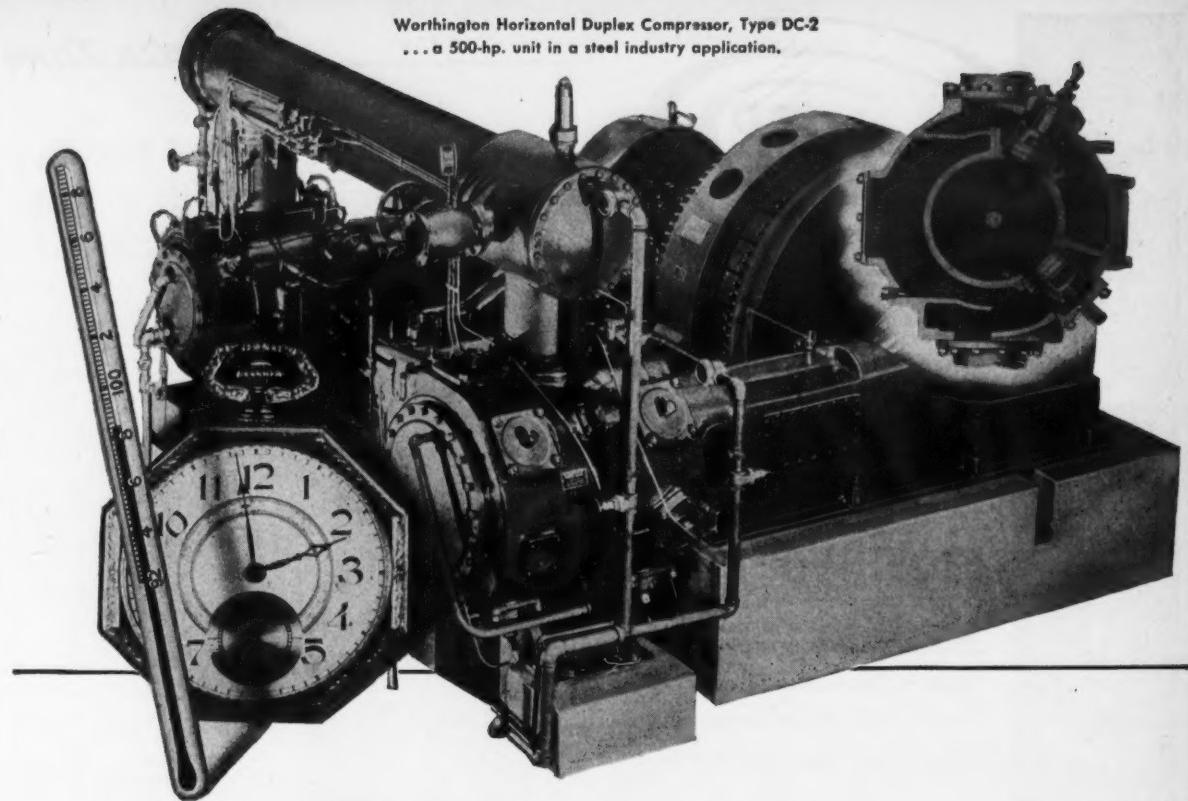
Discusses uses of butalastics in adhesive cements, aqueous dispersions, surface coatings, laminated materials, gaskets, packing materials. Extensive bibliography accompanies each chapter. Text includes a discussion of synthetic rubber, what it is, with historical retrospect presenting varied lines of research which culminated in present synthetic rubbers. Author: Frederick Marchionna. Price, \$8.50. Remit direct to publisher, name below, or address inquiries on inquiry slip.

REINHOLD PUBLISHING CORPORATION, Dept. CP, 330 W. 42nd St., New York 18, N. Y.

When inquiring specify CP 1988 — see handy form pages 2-3

JULY, 1947

Worthington Horizontal Duplex Compressor, Type DC-2  
... a 500-hp. unit in a steel industry application.



## PULSE: Rapid TEMPERATURE: Low

Typical of the way Worthington builds "top efficiency" into big compressors are the precautions taken to reduce temperature of the cylinders and valves of Worthington Type DC-2 units . . . a line of hard-workers from 75 to 3000 hp.

Water jacketing around the cylinder and in the heads keeps temperature . . . and, therefore, power consumption . . . at a minimum. Valve locations receive cooling from both cylinder and head jackets. The exclusive Worthington Feather\* Valves — lightest, tightest, most efficient ever devised — reduce air or gas friction to a minimum.

### WRITE FOR BULLETIN L-675-B1A

Write for your copy of this 32-page bulletin today and learn why—in compressors as in so much other equipment — there's more worth in Worthington. Worthington Pump and Machinery Corporation, Compressor Division, Buffalo, N. Y.

\*REG. U. S. PAT. OFF.

K7-8

**WORTHINGTON**



NO OTHER COMPRESSOR WILL OUTPERFORM A WORTHINGTON



V-types



Vertical



Horizontal



Portable



Radial



Gas-Engine Compressors

When inquiring specify CP 1989 . . . see information request blank, pgs. 2-3

Page 65

**PREMIER**

These Products Are  
Part of the Product  
— better products  
more profitably processed  
**the COLLOID MILL**  
with  
**PROVEN VERSATILITY**

**Dispersing** solids in liquids or liquids in liquids, Premier insures more finely divided colloidal suspensions and promotes immediate chemical reaction.

**Disintegrating** solid particles or the fibre and cellulose in animal or vegetable tissue — instantly exposing these particles to the wetting or extractive action of the suspending liquid.

**Emulsifying** — achieving non-separating emulsions of all viscosities.

**Homogenizing** — assuring superior homogenized products by compelling uniform distribution of the dispersed phase throughout the mix.

**CLIP COUPON FOR MORE DATA**

**PREMIER MILL CORPORATION**  
407 Genesee St., Geneva, N. Y.

SEND DESCRIPTIVE CATALOG

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
FLUID \_\_\_\_\_

When inquiring specify CP 1990 — see handy form pages 2-3

## Production Equipment

**Speed Mill Adjusts for Various Grinds, Purposes, While in Use**

*Homogenizes, Emulsifies or Disperses; Processes Foods, Corrosive Chemicals*



Speed mill with pump

Unit employs rotor and stator grinding stones, the former driven at high speed by a 3600 rpm electric motor. A 6-spline coupling minimizes wear, vibration. Measurements, with pump: 20" square, 5' high, 775 lbs., crated. No special foundation for mounting.

Catalog and complete information forwarded on request.

MOREHOUSE INDUSTRIES, Dept. CP, 1156 San Fernando Road, Los Angeles 31, Cal.

When inquiring specify CP 1991 — see handy form pages 2-3

\*

**Heats, Cools Small Quantities of Corrosive Solutions**

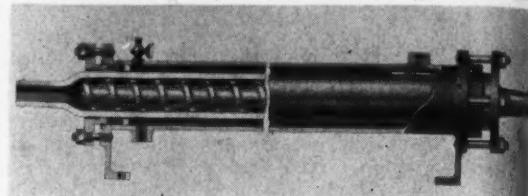
*Corrosion resistant alloy used in construction of exchanger*

**USES** — For heating or cooling small quantities of corrosive solutions over a wide temperature range. Since this exchanger (No. 4 Durco) can be readily connected together in series or parallel, multiple unit installations can be used to meet requirements of various operations. The Duriron alloy used in construction is resistant to most commercial acids, including all concentrations and temperatures of sulfuric acid, acetic acid, nitric acid, brine and plating solutions.

**FEATURES** — Separation of steam or coolant from the corrosive by a Duriron tube. Vertical or horizontal installation. No packing against corrosive solution. Re-

moval of parts without disturbing steam or coolant inlet and outlet connections.

**DESCRIPTION** — The Durco No. 4 heat exchanger is supplied both as a heater and a cooler. The heater is arranged for heating by steam, the cooler for cooling by means of water or other solutions. The inner tube and baffle core are made of Duriron, a high silicon iron



Sectional view of exchanger

containing 14½ per cent silicon. The outer jacket is steel. Both heater and cooler can be supplied with either split flanged or hose connections. The Duriron baffle core is made in four sections which fit together with centering tongue and groove to form a continuous spiral for the corrosive solution.

The spiral channel directs the flow of liquor in a long agitated contact with the tube wall, through which efficient heat transfer is obtained. In the cooler, a spiral is also used for the water or liquor in the outer jacket.

The exchanger is designed for handling an acid flow of 4 to 14 gpm with pressure drops of 5 to 34 ft. Heat

### Positive Vapor Control with **BS & B VENT VALVES**

BS & B Vent Valves offer positive protection against excessive vapor loss when storing petroleum products. Over-pressure lifts cover, allowing vapors to escape. Excessive vacuum lifts valve gasket, permitting in-breathing until normal pressure is restored.

Specifications to fit your venting requirements:  
Sizes 2" to 24"; Standard opening pressures, 3 to 1½ oz.; Maximum opening pressures, 16 to 4 oz.; Standard opening vacuum, ½ oz. Bodies, Covers, Gaskets, in wide variety of metals and materials.



Call your nearest B S & B Sales Engineer today! Or write to Special Products Division, Black, Sivalls & Bryson, Inc., Power and Light Building, Kansas City 6, Missouri.

FOREIGN INQUIRIES INVITED  
**BLACK, SIVALLS & BRYSON, INC.**  
EFFICIENCY RELIABILITY  
KANSAS CITY, MO.  
CASPER, WYO.  
OKLAHOMA CITY, OKLA.  
CALGARY, ALTA.

When inquiring specify CP 1992 — see handy form pages 2-3

**CHEMICAL PROCESSING** Preview

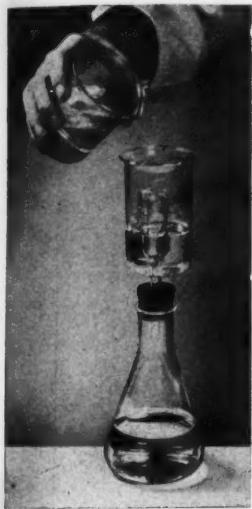
transfer (K) values, BTU/sq. ft./° F. based on water, vary from 325 to 390. This results in a capacity of 135,000 to 155,000 BTU per hour for the cooler, based upon 100° F. mean temperature differential. Bulletin 1610 gives detailed information.

DURIRON CO., INC., Dept. CP, 17 E. 42nd St., New York 17, N. Y.

When inquiring specify CP 1993 — see handy form pages 2-3

## Maintains Inert Atmosphere Above Reduction Reactions

200 ml. capacity air trap keeps air out of closed system, yet releases expanded gas



Air trap in use

**USES** — Air trap for maintaining inert atmosphere above reduction reactions in laboratory work. Also may be used as a simple gas generator.

Designed originally for routine determination of tin in babbitt, this equipment has many potential uses in analytical chemistry.

**FEATURES** — Prevents air from entering a closed system, yet permits escape of expanding gas from reaction flask while hot. Used as simple gas generator, it eliminates need for gas tanks, other elaborate equipment.

**DESCRIPTION** — Capacity, 200 ml. Unit consists of simple, beaker-like glass vessel with outlet tube at bottom. Vessel contains a bulb with overflow tube.

To determine tin in babbitt, air trap is placed in one-hole rubber stopper at top of flask holding reduced tin sample. Trap is filled with saturated solution of sodium carbonate until solution overflows siphon and runs into flask to start carbon dioxide generation in flask. Gas fills reaction flask, maintains atmosphere of CO<sub>2</sub> above solution until liquid cools and can be titrated.

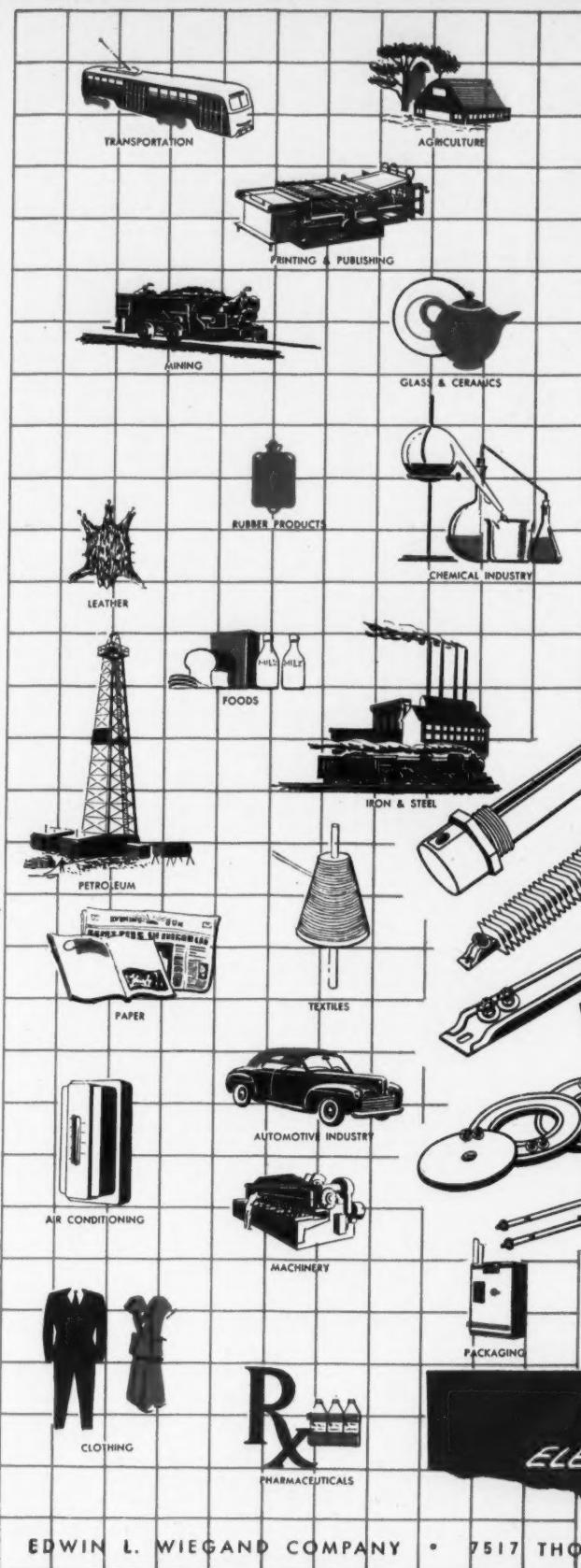
As reaction flask cools, contraction of gas above sample causes trap to siphon sodium carbonate from trap reservoir and down into flask. Introduction of air to relieve reduced pressure is thus prevented, and generating process is started again by fresh sodium carbonate.

Air trap unit Combined with two-hole stopper in Erlenmeyer flask, air trap becomes simple gas generator. Glass tubing in second hole leads gas off to maintain constant inert condition in separate reaction flask.

When generator evolves gas enough to fill connected flask, and it is stoppered, trap automatically starts and stops gas generation as required by heating or cooling of reaction flask. Further information on request.

FISHER SCIENTIFIC COMPANY, Dept. CP, 711-23 Forbes St., Pittsburgh, Pa.

When inquiring specify CP 1994 — see handy form pages 2-3



# THESE ADVANTAGES ARE YOURS

1. EFFICIENT HEAT when and where you need it to meet your specific requirements.
2. LOW INITIAL COST, plus low operating and maintenance cost.
3. ACCURATE TEMPERATURE CONTROL for holding the heat within desired limits—regulated automatically or manually.
4. PROVED PERFORMANCE in the shops, laboratories and offices of leading industrial plants.
5. BETTER PROCESS, production and product—uniformly high in quality, with less rejects.

with

## CHROMALOX

### Electric HEAT

A NATION-WIDE organization of Application Engineers will gladly give you practical on-the-job assistance at no cost to you.

#### WANT MORE "KNOW-HOW?"

Send for your copy of the booklet, "100 Ways to Apply Electric Heat" and Chromalox Catalog 42. Both manuals contain a wealth of application ideas and data on the use of electric heat in industry.



### CHROMALOX ELECTRIC HEATING UNITS

EDWIN L. WIEGAND COMPANY • 7517 THOMAS BOULEVARD • PITTSBURGH 8, PA.

When inquiring specify CP 1995 . . . see information request blank, pgs. 2-3

## Production

# MACBETH pH METER

Thoroughly tested and proved in use—a product of manufacturing experience—the Macbeth pH Meter—the original line operated, direct reading, continuous indicating instrument—is readily adapted to all pH measurement uses. Easy to use—only one operating control.

Photo shows a Macbeth pH Meter in use in the laboratories of Ciba Company, Inc., New York, N. Y. Write for bulletin.

## THE ORIGINAL AC DIRECT READING pH METER

MACBETH CORPORATION  
MANUFACTURERS OF SCIENTIFIC APPARATUS SINCE 1915  
227 WEST 17th STREET NEW YORK 11, N. Y.



When inquiring specify CP 1996 . . . see information request blank, pgs. 2-3

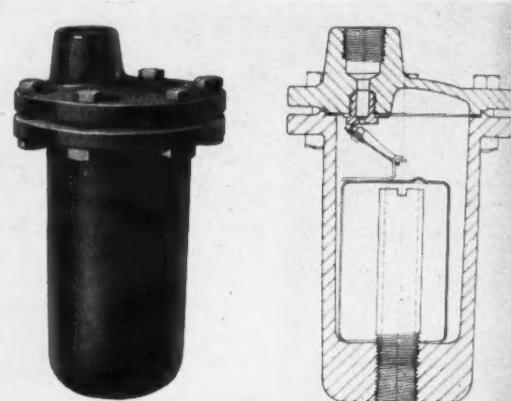
Page 68

## 250 psi. Withstood by Small, Forged Steel Steam Trap

Averages 900 lbs. of condensate per hour; retains strength despite exposure to fire

USES — All-steel steam trap for use with pressures to 250 psi. Useful in process industry plants such as chemical, food, power plants, steel mills and oil refineries.

FEATURES — Compact and small, yet body and cap are said to be capable of resisting pressures considerably in excess of normal operations. Highly resistant to im-



Forged steel steam trap

pacts. Material retains high strength characteristics despite exposure to fire or high temperatures.

DESCRIPTION — Forged steel construction. All-stainless steel internal operating mechanism, including valve seat. Capacity averages 900 lbs. of condensate per hr., continuous discharge. Trap measures 4 1/4" diameter at cap, with overall height of 7". Body and cap are steel forgings. Embodies manufacturer's inverted bucket and free floating valve lever design. Additional information furnished on request.

ARMSTRONG MACHINE WORKS, Dept. CP, 881 Maple Ave., Three Rivers, Mich.

When inquiring specify CP 1997 — see handy form pages 2-3

## Corrosion-Resistant Kettles, Flush-Type Plug Valves Presented in Catalog

Corrosion-resistant food, drug and chemical kettles, also flush-type plug valves, are featured in an 8-page bulletin. Contents include two-thirds and full jacketed kettles, both stationary and trunnion, in capacities from 5 to 500 gals. Presented with clear illustrations, complete ASME code specification tables.

Also 10 to 30 gal. kettles to cut operating time on processes involving alternate heating, cooling. Described in detail. Flush-type plug valves, designed to seal all product out of drain outlet such as contamination from unmixed material in outlet pipe, are presented. Kettles are of stainless steel, pure nickel or monel. A request will bring Bulletin No. 1.

LEE METAL PRODUCTS COMPANY, INC., Dept. CP, Philipsburg, Pa.

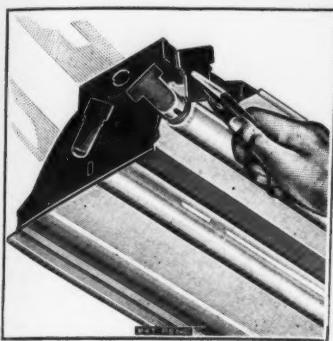
When inquiring specify CP 1998 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

*Production*

Recessed Fluorescent  
Troffers "Built to Fit"

*Admit 48" Lampholders; fit  
snugly into ceiling recesses*



Recessed fluorescent light troffers

USES — Troffers for recessed fluorescent lighting installations.

FEATURES — Require no more ceiling length than the lamps and their holders; special K.O.'s in ends make possible accurate 48.0" lengths, permit lampholders to be inset in ends, flush with outside surface of closed ends (see cut). Troffers fit exactly into openings in ceilings of standard building blocks or tile.

Ready to install. Quick mounting brackets simplify installation, and convenient K.O.'s in tops and ends speed wiring. Complete selection of accessories gives exact illumination required. Built-in attachment features enable adding or interchanging accessories as desired. Choice of two reflector surfaces.

DESCRIPTION — All units equipped with 300° White Reflectors. Alzak Reflectors may be had with special Alzak Reflector liners. Two type troffers: deep, for 1, 2 or 3 40 w. lamps; shallow, for 1 or 2 40 w. lamps.

Are supplied with flange or teebar mounting edges. Accessories include baffles, two types of eggcrate louvres, and both flat and formed-glass panels. For further data, request new Guth Recessed Troffer catalog.

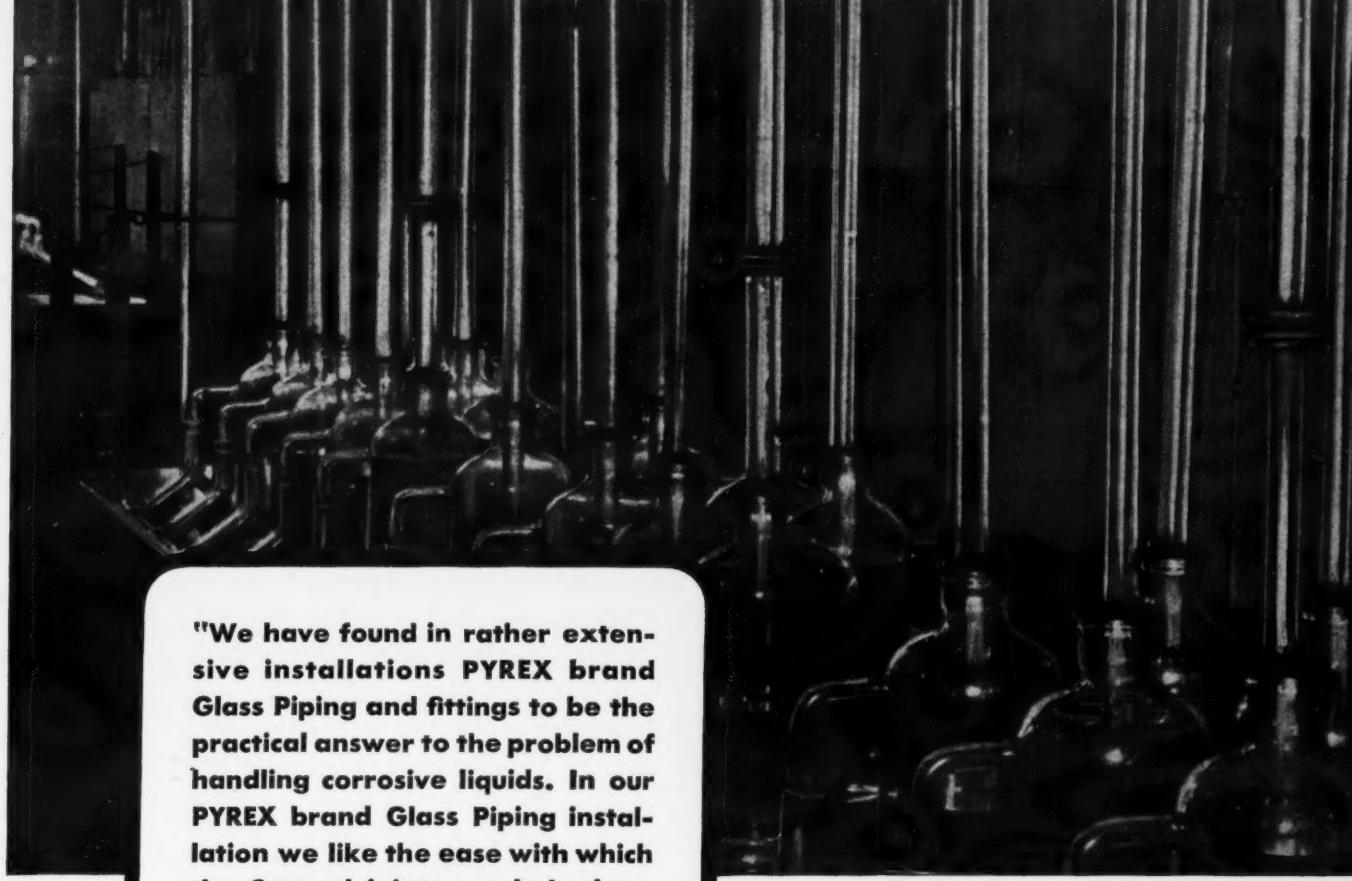
EDWIN F. GUTH COMPANY, Dept. CP, 2615 Washington Blvd., St. Louis 3, Mo.

When inquiring specify CP 1999  
— see handy form pages 2-3

For more information on product at right, specify CP 2000  
— see information request blank between pages 2-3.

# PYREX Brand Glass Pipe...

## THE PRACTICAL ANSWER TO CORROSIVE LIQUID TRANSFER



**"We have found in rather extensive installations PYREX brand Glass Piping and fittings to be the practical answer to the problem of handling corrosive liquids. In our PYREX brand Glass Piping installation we like the ease with which the flanged joints are bolted together, the feature of visibility of liquid flow, the inertness of PYREX brand glass and the low maintenance cost of the glass line."**

**OLDBURY ELECTRO-CHEMICAL CO.  
Niagara Falls, N. Y.**

In standard lengths up to 10 ft., PYREX brand glass pipe meets almost every plant-operating requirement. It is suitable for normal working pressures and temperatures as high or higher than 250° F. Pipe ends are flanged and adapter fittings are available for connecting PYREX pipe to metal tubing, threaded pipe, A.S.M.E. flanged pipe and glass-lined pipe, and other equipment. A complete line of PYREX glass fittings are available for all sizes of PYREX pipe. Special fittings can be made to order.

PYREX pipe is practical plant equipment. Its sturdiness and serviceability have been proved by installations that have been in operation for many years. It is the only pipe that gives you the combined advantages of visibility, corrosion resistance, and purity maintenance. It can be installed and used with confidence.

**CORNING GLASS WORKS  
CORNING, NEW YORK**

SALES OFFICES: NEW YORK • CHICAGO • SAN FRANCISCO

CORNING GLASS WORKS, DEPT. CP7, CORNING, N. Y.

Please send me Bulletin IA-3 describing PYREX brand pipe.

NAME..... TITLE.....

COMPANY.....

ADDRESS.....

CITY..... ZONE..... STATE.....



**PYREX GLASS PIPE**  
BRAND

*Correct Engineering*

IS THE "SECRET" BEHIND  
the  
**KIRK AND BLUM**  
**INDUSTRIAL OVENS**

Kirk & Blum Portable Electric Dryer, designed especially for use in the Rayon and Chemical Industries.

Performance records established by Kirk & Blum Industrial Ovens offer convincing evidence of the experience and knowledge which go into the construction of engineered drying and baking equipment.

You'll find it decidedly to your advantage to find out how the services of Kirk & Blum Air Engineers can help you with your particular problem. The Kirk & Blum Manufacturing Co., 2833 Spring Grove Ave., Cincinnati 25, Ohio.

**KIRK AND BLUM** SPECIALISTS IN INDUSTRIAL OVENS

When inquiring specify CP 2001 — see handy form pages 2-3

## "NATIONAL" CHEMICAL DRYERS

Designed to Assure Uniform Drying at Higher Speeds, Lower Costs . . .



Above — New Truck Type Tray Dryer for chemicals and pharmaceuticals. Write for details of improved features.



Above — Single Conveyor Dryer for handling large quantities of chemicals, abrasives, etc. Continuous hopper feed; automatic leveler; pressure extraction.



Right — Semi-Continuous Tunnel Type Truck Dryer. For quantity production of filter pressed chemicals and minerals.

Test Dryers for All Purposes



Special Drying and Heating Equipment

**THE NATIONAL DRYING MACHINERY CO.**  
2709 N. HANCOCK STREET, PHILADELPHIA 33, PA.

When inquiring specify CP 2002 — see handy form pages 2-3

## Production

### Protect Heating Mantles with Spun Aluminum Housing

Gives even heat; replaceable inner parts save buying new mantles; 1-72 liter sizes



Aluminum-housed heating mantle

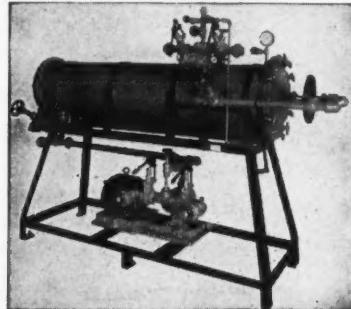
USES — Heating mantle with aluminum housing for laboratory flasks. F E A T U R E S — Rigid housing prevents mantle damage, enables closer fit on large sizes. Fabric lining provides good heat transfer with high efficiency.

Damages resulting from spilled chemicals or overheated mantle does not necessitate purchase of new mantle, as inner parts may be replaced. Retains all advantages of all-fabric construction, plus added features. Assures even heating without hot spots such as cause glass breakage or destruction of reagents.

Cools quickly when mantle is turned off.

DESCRIPTION — Outer housing is spun aluminum. Inside portions are soft, holding flask closely. Unit is

### Large Capacity Clarification With FULLY MECHANIZED CLEANING



**LE VAL**  
**Porous**  
**Stone**  
**Filters**

### In POLY-FLO Models

A multiple arrangement of filterstones provides large capacity in the Poly-Flo Models of Le Val Filters. Rigidly supporting filter-aid, the porous filterstone prevents breakthrough, and positively assures brilliance of filtrate.

Cleaning by valve-controlled stripping sprays eliminates messy hand labor. Ranges of sizes and full description in new Bulletin F-103, available now.

**LE VAL FILTERS**  
**WHITING CORPORATION**  
District engineers in 26 principal cities  
15667 Lathrop Ave. Harvey, Illinois

When inquiring specify CP 2003 — see handy form pages 2-3

**CASE HISTORY No. 16**  
One in a series of factual experiences of a group of American manufacturers with Multi-wall Paper Bags.

### COST COMPARISON (Per Ton)

	250-lb. barrels	100-lb. barrel bags	50-lb. paper bags
Container cost . . .	\$7.90	\$3.50	\$1.60
Labor cost . . .	1.33	1.00	.66
Total bag and labor cost . . .	\$9.23	\$4.50	\$2.26
Saving per ton paper over barrels . . .			\$6.97
paper over barrel bags . . .			\$2.24

### CLASS OF PRODUCT PACKED

CIMENT	FERTILIZER
CHEMICALS	FOOD
FEEDSTUFFS	MISCELLANEOUS ✓

### PRODUCT CHARACTERISTICS

ABRASIVE	GRANULAR
CORROSIVE	HEAVY
DISSOLVENT	HYGROSCOPIC
FLUFFY ✓	LIGHT ✓
FREE-FLOWING	VISCOSUS

**St. Regis Packaging Systems** are designed to meet a wide range of product requirements and plant layouts. Packers are available in a variety of sizes and types, with filling speeds as high as twenty-four 100-lb. bags per minute—with one operator. Nearly 400 commodities—rock products, fertilizers, chemicals, foods, and feeds—are now being packaged in sturdy, low-cost multi-wall paper bags.

# How Multiwalls cut packaging costs 75% and wiped out customer complaints

Customers said that burlap bags and barrels were bulky and that their workers complained about handling them. Container costs were high. The packaging operation — mostly manual — was slow, dusty, and inefficient.

This unhappy situation was causing plenty of headaches for the 67-year-old Southwark Manufacturing Company of Camden, N. J. This company packs several non-metallic minerals, including whiting, talc, and barytes.

"We were packing our whiting in 350-lb. wooden barrels and 100-lb. burlap bags," company officials said, "but there were many disadvantages. What we needed was a mechanical packing system and a cheaper, easier-to-handle container."

About 12 years ago this company adopted an automatic packaging system—consisting of three labor-saving 105-FV St. Regis bag-filling machines and 50-lb. multiwall paper valve bags. Here are the current savings:

- **Packaging costs (labor and container) dropped 75% compared to barrels—50% compared to burlap bags.**
- **Container costs showed an 80% saving over barrels—54% over burlap bags.**
- **Labor saving totaled 50% over barrels—34% over burlap bags.**

"Customer complaints just disappeared," these officials said. "They reported that the valve bags kept their whiting clean, dry, and free flowing and that their workers liked them because the 50-lb. size was an easy load for one man. Paper bags are cleaner, too, because there's no sifting. Another big point is that they take only one-third as much storage space as barrels.

"They were so satisfactory from all angles that we switched to valve bags for our talc and barytes.

"We're sold on paper bags and so are our customers. If anyone comes to us, we'll be glad to tell him about the advantages of Multiwalls."

Mail the coupon for the detailed picture story of this operation. Learn how a St. Regis System like this can give you better packaging at less cost.



Multiwall self-closing valve bags are filled and weighed by these 105-FV packers. Only one operator is needed for each machine.

Below: A view of the storage room at Southwark Mfg. Co. Note how compactly Multiwalls stack — twenty bags high.



## Production

similar in operation to all glass-fabric mantle of this manufacturer. All resistance wires are thoroughly covered with glass fabric to eliminate danger of shorting.

Designed so that resistance wires will not be operated at temperatures where they become red or glow. Mantles are in sizes from 1 to 72 liters. Since metal housing must be shaped to fit flask, special shapes for containers such as funnels, columns, bottles and valves continue to be entirely of glass fabric. Additional details forwarded on request.

GLAS-COL APPARATUS COMPANY, Dept. CP, 1700 S. Seventh St., Terre Haute, Ind.

When inquiring specify CP 2005 — see handy form pages 2-3

★

## Converts Aerosol to Dry Gas, Destroying Ants, Roaches

115 volt AC-DC unit throws spray 8 to 10 ft.

USES — Electrically-operated Aerosol insecticide gun and concentrate for cockroaches, mosquitoes, flies, bedbugs, spiders, moths, fleas, ants, silverfish, weevils, other insects. Has wide industrial application, and manufacturer reports it will not contaminate food products.

FEATURES — Leaves no oily film or unpleasant odor. Employs no steam or moving parts, yet supplies sufficient pressure to discharge dry gas eight to ten feet in a not-readily-dissipated fog.

Manufacturer states that product has been "proved non-toxic" by American Research and Testing Laboratories, and that one filling is good for "several hours" operation.

DESCRIPTION — Automatically converts manufacturer's Aerosol concentrate to gas by means of thermostatically controlled heating process. Operates on 115 volt AC-DC. To operate, remove filler cap from back plate, and pour in charge of concentrate. A few minutes' heat is required to change the liquid to gas.



115 volt AC-DC Aerosol insecticide gun

Weight, 6 lbs. Length, 12". Height 9". Case is molded plastic. All parts entirely self-contained. Additional information will be furnished on request.

MAYFAIR INDUSTRIES, Commando Division, Dept. C, Dept. CP, 2442 Irving Park Road, Chicago 18, Ill.

When inquiring specify CP 2006 — see handy form pages 2-3

Page 71

**MULTIWALL**  
MULTI PROTECTION - MULTI SALEABILITY  
**ST. REGIS SALES CORPORATION**  
(Sales Subsidiary of St. Regis Paper Company)

NEW YORK 17: 230 Park Ave.

CHICAGO 1: 230 No. Michigan Ave.

BALTIMORE 2: 1925 O'Halloran Blvd.

SAN FRANCISCO 4: 1 Montgomery St.

ALLEGTON, PA: 642 Hamilton St.

Mail this coupon for the complete story

REPRESENTED IN OTHER PRINCIPAL CITIES — IN CANADA:  
ST. REGIS PAPER CO. (CAN.) LTD., MONTREAL • VANCOUVER

ST. REGIS SALES CORPORATION  
Dept. CP, 230 Park Avenue, New York 17, N. Y.

**Without obligation,** please send me full details regarding "Case History" No. 16, outlined above.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

When inquiring specify CP 2004 . . . see information request blank, pgs. 2-3

## Production

## Production

### "Continuous Wind" Simplifies Making of Exhaust Hoses

Permits permanent attachment of cuffs, bushes, reducers, flanges to diameters from 1 to 24"

**USES** — Lightweight, spiral-wire reinforced hoses and accessories, manufactured by new, "continuous wind" process. Hose thus manufactured supplements "Flexaust" types now used for ventilating purposes and in fume and dust control in a wide variety of industries.

**FEATURES** — New process provides for manufacture of continuous hose lengths in any required diameter from 1 to 24". Simplifies construction changes, where necessary, to secure various degrees of flexibility, compressibility, crushing resistance and other physical characteristics.

Cuffs, bushes, reducers or flanges can be permanently attached to any of these hose lengths if required, greatly facilitating and simplifying connections on many types of industrial equipment, particularly those having outlets of different size or shape.

**DESCRIPTION** — This process uses neoprene pre-coated fabrics. Write for additional information.

AMERICAN VENTILATING HOSE COMPANY, Dept. CP, 15 Park Row, New York 7, N. Y.

When inquiring specify CP 2007  
— see handy form pages 2-3



### Catalogs Industrial Fire Hose

A general line of industrial fire hose is described and illustrated with cross-sectional views in a six-page folder, vest-pocket size.

Includes rubber-covered hose for moisture and acid fume conditions, also mill hose and single or double-jacket fire hose. Lengths and dimensions are given, and construction is described. Write for "Hewitt 'Job-Engineered' Fire Hose."

HEWITT RUBBER, Dept. CP, 240 Kensington Ave., Buffalo 5, N. Y.

When inquiring specify CP 2008  
— see handy form pages 2-3

For more information on product at left, specify CP 2009  
— see information request blank between pages 2-3.

When inqu

THE LODGE  
Rissell Div.,

JULY, 1

## HOW TO GET VACUUM DRYERS HOTTER, SOONER

loads brings equipment to working temperature sooner; discharge at short intervals under lighter condensate loads keeps it hot.

Other Yarway features—one moving part, easy maintenance, small size, easy to install, suitable for all pressures, low price.

Try a Yarway today... standardize on Yarways tomorrow. See your local Mill Supply Dealer or write for Yarway Bulletin T-1739.

**YARNALL-WARING COMPANY**  
125 Mermaid Ave., Philadelphia 18, Pa.

OVER 525,000 ALREADY PURCHASED!

**YARWAY IMPULSE STEAM TRAP**

### YARWAY IMPULSE TRAPS DRAIN STEAM-HEATED VACUUM DRYER IN CHEMICAL LABORATORY

Industrial applications of high vacuum processing are constantly increasing... and so are installations of Yarway Impulse Steam Traps.

Here at the Eastern Regional Research Laboratory of the Department of Agriculture, three Yarways are shown on a steam-heated vacuum drum dryer in the Chemical Engineering and Development Division.

These and nearly 200 other Yarways used on various equipment in the laboratory, are doing a good job... and so they should. Yarways are famous for getting equipment hotter, sooner, and keeping it hot. Continuous discharge under heavy

Valve  
Pro

Air e

USES — A venting us systems.

For specia involving in rubber,

DESCRIPT connection fo brass bar s stem is rep

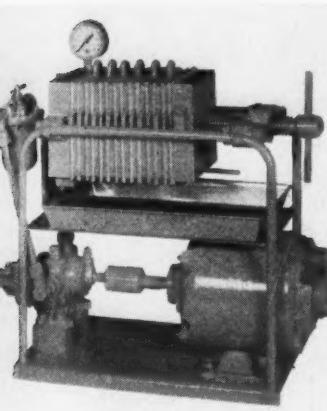
Monel met fastened in connection condensate top of valve sation to a

THE LODGE  
Rissell Div.,

When inqu

## 60 gph Filtered by 70-lb., 1/6 hp Portable Lab Filter Press

Removal of .0035" colloidal particles from incoming fluid boosts efficiency



Portable laboratory filter press

built-in relief valve maintains fluid pressure below psi. without interrupting the filtration process. pump is driven by a 1/6 hp, 1200 rpm motor suitable for operation on a 110-volt, 60-cycle power supply.

unit weight, 70 lbs. Height, 18"; length, 14"; width, 12". Despite its small size, this unit is capable of high efficiency filtration at the rate of 60 gph. Additional information will be forwarded on request.

KEYE LABORATORIES CORPORATION, Dept. CP, 20 Morgan Ave., Cleveland 4, O.

When inquiring specify CP 2010 — see handy form pages 2-3



## Valve Vents Steam Pressure in Processing, Heating Systems

Air eliminator unit has 3/4" pipe connection, handles pressures to 110 lbs.

ES — Air eliminator valve for high pressure steam venting used in processing and high pressure heating systems.

Special application in steam processing operations involving pressure up to 110 lbs. for increased efficiency in rubber, canning, chemical and food processing.

SCRIPTION — Valve has standard 3/4" pipe connection for installation. Body is in two parts, both of brass bar stock machined to precision standards. Valve stem is replaceable brass hex bar stock.

nel metal bellows are 12 convolution, 1 1/2" diameter, tened in bottom of valve by one 1/4" 20-thread screw connection. Bottom of valve body is drilled to return condensate back into steam line. A 3/8" pipe thread at top of valve body is for convenience of piping condensate to a drain. Further data forwarded on request.

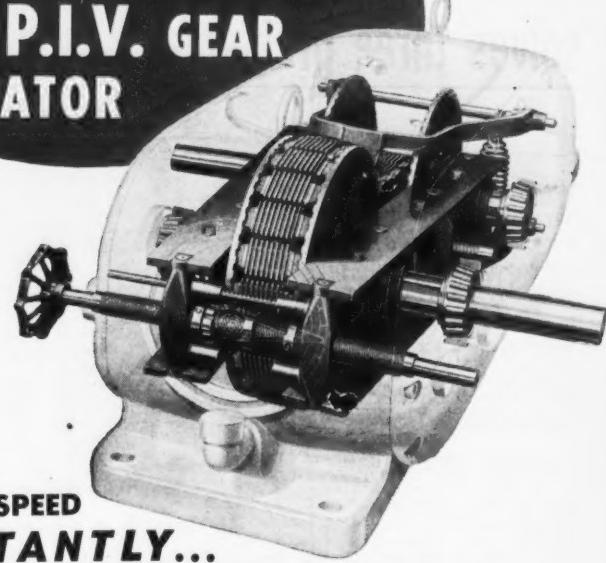
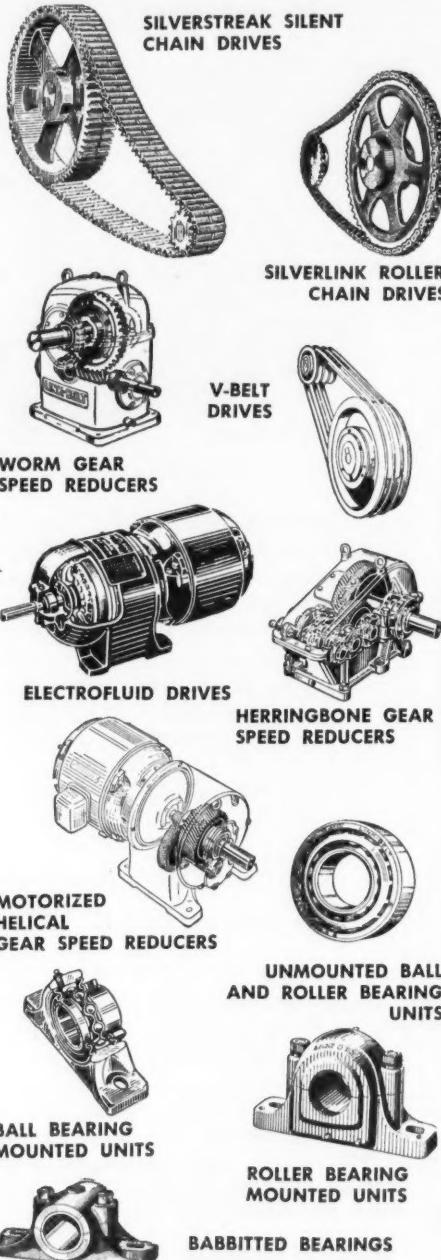
LODGE & SHIPLEY MACHINE TOOL COMPANY, Mfg. Div., Dept. CP, 800 Evans St., Cincinnati 4, Ohio.

When inquiring specify CP 2011 — see handy form pages 2-3

Y, 1947

# MODERNIZE DRIVES for Exact Speed WITH LINK-BELT P.I.V. GEAR SPEED VARIATOR

**LINK-BELT POWER TRANSMISSION  
MACHINERY SERVES ALL INDUSTRY**



**GET  
ANY SPEED  
INSTANTLY...  
MAINTAIN IT ACCURATELY with this  
POSITIVE, INFINITELY VARIABLE  
Speed Changing Unit**

In any process where precise speed is a factor in quality, costs, efficiency or profits, the P. I. V. Gear speed variator supplies the ideal drive. With this unit, power is transmitted through an all-metal chain, making tooth-to-tooth contact with metal wheels. Within wide limits this unique, self-contained unit enables you to vary the speed of a driven machine to a minute fraction of a revolution per minute. Once selected, the chosen speed is maintained indefinitely, without slip or creep. Speed is changed while the drive is running by a small hand wheel, or by automatic or remote control.

Built for vertical or horizontal mounting, plain or motorized, and with or without enclosed reduction gears. From 1/2 to 15 h.p. and ratios up to 6:1. Get book 1874 for full details.



**LINK-BELT COMPANY**  
**THE LEADING MANUFACTURER OF CONVEYING AND  
MECHANICAL POWER TRANSMISSION MACHINERY**

Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1,  
Minneapolis 5, San Francisco 24, Los Angeles 33,  
Seattle 4, Toronto 8. Offices, Factory Branch  
Stores and Distributors in Principal Cities.

10.737-B

**LINK-BELT**  
**Power Transmission  
Machinery**

When inquiring specify CP 2012 . . . see information request blank, pgs. 2-3

# One Resyn\* adhesive solves three problems

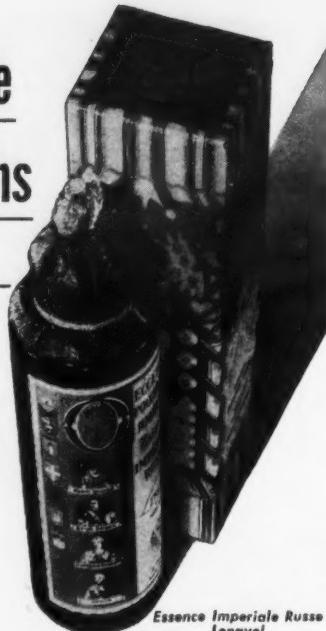
LENGYEL said, "The full, heady fragrance of ESSENCE IMPERIALE RUSSE is more concentrated than the usual cologne. It must be fully protected by an especially designed stopper that presents a difficult threefold adhesive problem. We must bond: 1—Glass to Wood . . . 2—Wood to Metal . . . 3—Simulated Leather to Wood. Can it be done?"

Once again, the answer was, "Yes with one RESYN adhesive!"

Address: National Adhesives, Dept. C, 268 Madison Avenue, New York 16; 3641 So. Washtenaw Ave., Chicago 32; 735 Battery St., San Francisco 11; and other principal cities. In Canada: Meredith, Simmonds & Co., Ltd., Toronto and Montreal. In England: National Adhesives, Ltd., Slough. (\*Reg. Trade Mark)

EVERY TYPE OF ADHESIVE FOR EVERY INDUSTRIAL USE

When inquiring specify CP 2013 — see handy form pages 2-3



Essence Imperiale Russe  
Lengyel

National  
ADHESIVES

a contrast in  
DRYING SERVICES  
with  
**LANLY OVENS**



These pictures indicate the scope of Lanly oven building services. Material being processed is carried through the upper oven in containers. In other ovens the material is pushed through mechanically or conveyed on overhead equipment.

At the left is one of several sizes and types of drawer ovens designed to dry various materials. Rack type, left door, shelf type and other varied kinds of Lanly ovens are also available. Write for bulletin and state your requirements.

**THE LANLY CO.**  
OVENS FOR INDUSTRY  
HEATED BY GAS, OIL, ELECTRICITY OR STEAM  
750 PROSPECT AVENUE • CLEVELAND, OHIO

When inquiring specify CP 2014 — see handy form pages 2-3

## Production

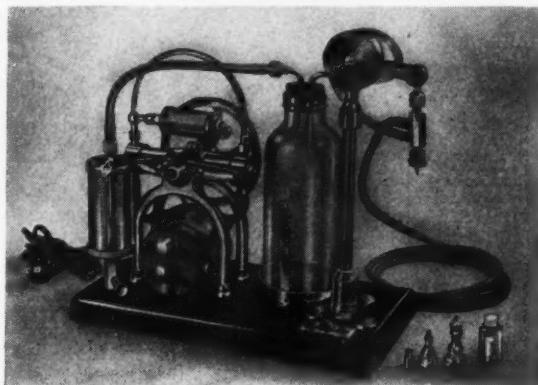
### Minim, Dram, Oz. Bottles Filled by Electronic-Controlled Filler

17-lb. unit empties expensive materials for reclaiming, blows lint from containers

USES — Portable bottle filler for filling minims, drams up to ounces, and at varying levels. Also empties bottles of expensive materials for reclaiming. Makes bottles free from dust, lint, foreign matter.

For handling perfumes, other light liquids. Fills wide variety of handblown and molded miniature bottles.

FEATURES — Speedy and efficient, using same filling spout for all units. Simple adjustment varies filling height



Miniature bottle filler

in few seconds. Drip-proof. An air blast device cleans bottle with filtered air, removing foreign matter.

DESCRIPTION — Operation of vacuum filling unit is by automatic, intermittent electronic control. Overall weight, 17 lbs. Operates on 110 volt AC, 60, 50, 25 cycles, also on DC.

All parts are chrome finished and protected by dust-proof cover. Additional facts forwarded on request.

SHANNON INDUSTRIES, Inc., Dept. CP, 33 West 42nd St., New York 18, N. Y.

When inquiring specify CP 2015 — see handy form pages 2-3

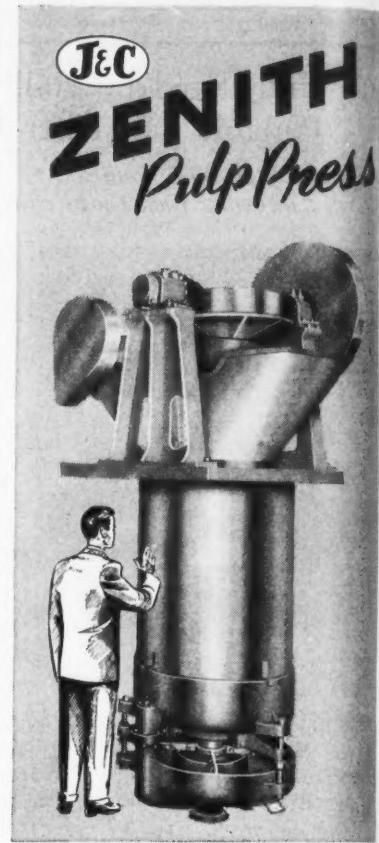
### Cakes Easily Removed from Vertical Stack Filter Press

Combination of plate and frame in one casting speeds removal via individual latched frames

USES — New, vertical stack, cast iron filter press for filtration of alkyd resins, solvents, paint, varnish, molasses, honey, fruit syrups, soaps, liquid shampoos, shaving lotions, fish, linseed, castor and essential oils, cutting oils and coolants, other liquids.

FEATURES — Most outstanding feature is the combination of plate and frame in one casting to permit easy removal of cakes. Hence, it is easily cleaned.

DESCRIPTION — Combination of plate and frame makes possible the removal of cakes through an individual latching arrangement of each frame. Starting with top frame, each section is individually latched in elevated position to



**INCREASES  
PRESSING EFFICIENCY  
RECOVERS  
EXTRA PROFITS**

100% automatic . . . from storage bin to finished product . . . the Zenith Pulp Press dewateres up to 26 tons of wet pulp or slurry per hour.

In a continuous operation, material is conveyor-fed to a screw-type spindle that compresses and feeds it through the press.

Heater resistors keep pulp constantly rolling over and assure maximum dewatering by offering new pulp surfaces to drainage screens. Resistors are rifle drilled for steam injection . . . permitting heating of pulp while under pressure.

Finished material is conveyed from the press by means of a screw or belt conveyor . . . completing an entirely automatic process.

New uses for the Zenith Pulp Press are being discovered every day. Among the many installations for dewatering are: BEET PULP • PINEAPPLE • TOMATO POMACE • CORN GERM AND FIBRE • VEGETABLES • BREWER'S GRAIN • CHERRIES • CITRUS FRUITS • FISH • PAPER PULP • RECLAIMED RUBBER • TANKAGE • ETC.

A Pilot Press is available for trial in your plant.

"Work Well Done Since '81"

A PRODUCT OF  
**Jackson & Church Co.**  
SAGINAW, MICHIGAN

When inquiring specify CP 2016  
— see handy form pages 2-3

CHEMICAL PROCESSING Preview

permit filter paper and cake to be pulled forward out of the press. Cake is quickly removed, and filter paper re-



Vertical stack filter press with plate and frame combined for easy removal of cakes

placed. Frames are then re-lowered into position and tightened by hand screw, forming a tight press. Filtering area is 31 sq. ft., with 2 cu. ft. of cake space. Additional information furnished on request.

YOUNGSTOWN MILLER COMPANY, subsidiary of WALTER KIDDE & COMPANY, Inc., Dept. CP, Belleville, N. J.

When inquiring specify CP 2017 — see handy form pages 2-3



#### 68-Page Catalog Describes "Flexonics" as Applied to Flexible Metal Hose

A 68-page full-line catalog describes flexible metal hose products as developed by "Flexonics," a term described by manufacturer as "the controlled bending of thin metals for use under varying conditions of temperature, pressure, vibration and corrosion."

Catalog includes technical data on stainless steel bellows and hose, corrugated hose, convoluted tubing. Application photos are presented, also complete specifications, instructions for hose installation, a chart of relative metal hose values, other useful information. Products include stainless steel in both annular and helical corrugated formations.

A section of laboratory photographs points out how "Flexonics" combines research, development and a knowledge of installation requirements to produce this equipment. Catalog G-47 forwarded on request.

CHICAGO METAL HOSE CORPORATION, Dept. CP, Maywood, Ill.

When inquiring specify CP 2018 — see handy form pages 2-3

JULY, 1947



## A Fist Full of HORSEPOWER ... in the New Explosion-Proof Gast Air Motor

A mere fist full, but there's plenty of power in this new *explosion-proof* Gast Air Motor that operates with compressed air. It weighs only 2½ pounds and is 2¼ inches in diameter, but it delivers up to ⅛ horsepower. It will start in any position and run under constant low speeds without stalling. Speed is variable from 0 to 6,000 r. p. m. Like other Gast Air Motors, the design is utter simplicity. There are few moving parts, practically nothing to wear out and the initial cost is low... service cost, rarely any. It can never burn out, even when heavily overloaded and it cannot spark, it meets all explosion-proof safety requirements. There are two other sizes available for heavier loads; one develops up to ½ horsepower, the other up to 1 horsepower. Both incorporate all of the outstanding features of the new "fist full" size. All are completely described in the new Gast Catalog.

GAST MFG. CORP.  
101 Hinkley Street  
Benton Harbor, Michigan

2306

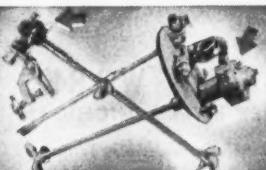
## VACUUM PUMPS • AIR COMPRESSORS • AIR MOTORS



A Gast Air Motor on a Portable Mixer.



Gast Equipment on a Spray Outfit.



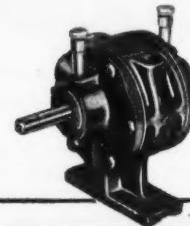
Gast Air Motors on Portable Agitators.



Gast Vacuum Pump in a Sump Cleaner.

### ENGINEERING TEST OFFER ... So You Can SEE if YOU'RE MISSING SOMETHING!

Simply write our Engineering Department and explain the operation you think air might handle, or describe the job air is already doing for you. Our Engineering Department will study your problem, select or design a Gast unit to do the specified work at less cost or at greater efficiency or both. Then, without cost or obligation, the recommended unit will be shipped to you for your performance tests.



### GET THIS IDEA-CATALOG



*It not only tells how Gasts are built and all about them, but suggests uses that may not have occurred to you. Write for it; no charge or obligation!*

When inquiring specify CP 2019 . . . see information request blank, pgs. 2-3

# DON'T LET AIR STEAL YOUR POWER



**ARMSTRONG PURGER USER CUTS HEAD PRESSURE 55 LBS., SAVES 25% ON POWER**

Before installing an Armstrong Purger head pressure in the refrigerating system of a prominent ice cream plant in Chicago was 185 psi. After the purger removed air and non-condensable gases from the system, head pressure dropped to 130 psi. Since each 4 lbs. decrease in head pressure means approximately 2% savings in power costs, the power bill was cut over 25%. It didn't take long to pay for this purger! Other dividends include the elimination of time formerly wasted in manual purging and reduction of refrigerant gas loss. You don't have to take any chances on Armstrong Purgers—they're guaranteed to give satisfaction. Write for details.

• How does an Armstrong Purger work? What's the theory behind efficient purging? Bulletin No. 173 discusses these things in some detail. Write for a copy.



**ARMSTRONG MACHINE WORKS**  
880 MAPLE ST. • THREE RIVERS, MICHIGAN

Makers of Purgers and High Side Floats . . . Air Traps  
Oil Separator Traps . . . Inverted Bucket Steam Traps

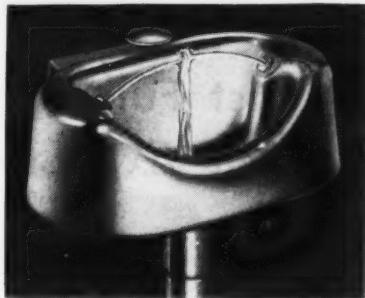
When inquiring specify CP 2020 — see handy form pages 2-3

Page 76

## Production

### Eye Washing Fountain Leaves Hands Free

*Basin fits face, head actuates valve and pressure regulator*



Eye washing fountain

**USES** — Eye washing fountain for immediate flushing of eyes exposed to irritating vapors, liquids, dusts, chemicals or smoke. For ready installation in laboratories, plants and first aid rooms.

**FEATURES** — Leaves hands free to spread eyelids apart, assuring contact of water with every portion of eye tissues, including those contacted by foreign substance.

Unit is in accord with recommendations of eye specialists for flushing entire eye area with copious amounts of water as soon as injuries of this nature occur. Helps avoid serious injury, great pain and possible blindness. Quick and efficient.

**DESCRIPTION** — Unit consists of a double fountain with standard inlet and drain connections. Openings are so arranged that two streams of water simultaneously are

**STREPTOMYCIN**

ANOTHER WONDER PRODUCT OF LOW PRESSURE PROCESSING

Kinney High Vacuum Pumps play an important part in the freeze-dry process at the new Streptomycin Plant of Merck & Co., Inc. at Rahway, N. J. Under super sterile conditions, vapor from the sublimation dryer is frozen in a high vacuum at 80 deg. C. and removed as snow. Kinney Vacuum Pumps are giving highly dependable service wherever low absolute pressures must be maintained. Their compact design saves floor space, and fast pump down and low ultimate pressures shorten production time and reduce costs. Kinney Single Stage Vacuum Pumps produce low absolute pressures to 10 microns; Compound Pumps to 0.5 micron.

Write for Bulletin V45

### KINNEY MANUFACTURING COMPANY

3573 WASHINGTON STREET, BOSTON 30, MASSACHUSETTS  
New York • Chicago • Philadelphia • Los Angeles • San Francisco

We also manufacture Liquid Pumps, Clutches and Bituminous Distributors

When inquiring specify CP 2021 — see handy form pages 2-3

## Specify DRAVERS



No. 160, Style "K", Draver Chemical Feeder, complete with non-braking hopper and motor drive.

**DRAVER FEEDERS** provide an accurately controlled continuous feed of most dry, powdered or granular chemicals, in volumes ranging from as little as  $\frac{1}{2}$  oz. to 3 lbs. per min. (No. 160, Style "K", at left) up to 1,000 cu. ft. per hr.

More than 100 standard sizes and models of Draver Feeders are available. Complete information supplied upon request.

*Gump Engineers, backed by the experience of 75 years, will be glad to work with you in selecting the Gump-Built Equipment best suited to your specific requirements.*

*Gump-Built Equipment includes machinery for Feeding, Grinding, Mixing, Packing, Sifting, and Weighing dry, flaked, granular, and powdered materials.*

**75TH YEAR**

**B. F. GUMP CO.**

Engineers and Manufacturers Since 1872

452-456 South Clinton Street

Chicago 7, Illinois

When inquiring specify CP 2022 — see handy form pages 2-3

**Give Higher Vacuum—Faster More Efficiently—Safer IN PROCESSING OR TESTING**

**BEACH-RUSS ROTARY (SS) VACUUM PUMPS**  
Maintain absolute pressures to 5 millimeters.

Lubricated — tight vacuum seal — smooth, trouble-free, quiet service. Capacities 6 to 375 c.f.m.

**BEACH-RUSS ROTARY PISTON (RP) HIGH VACUUM PUMPS**  
Maintain low absolute pressures to 10 Microns.

Lubricated — slow speed — quiet — long service life — corrosion resistant — low power cost. Capacities 15 to 750 c.f.m.

Write for Catalogs 80 & 82

**BEACH-RUSS COMPANY**

46 CHURCH STREET

NEW YORK 7, N. Y.

When inquiring specify CP 2023 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

## Production

directed against eyes. Water pressure can be regulated for a soft stream assuring copious but easy flow.

Cast aluminum bowl is designed to fit upper contours of face. Valve is actuated by resting head on upper portion of bowl, automatically putting eyes within ideal range. A pressure regulator is built into actuating valve. Additional information forwarded on request.

BENSON & ASSOCIATES, INC., Dept. CP, 332 S. Michigan Ave., Chicago 4, Ill.

When inquiring specify CP 2024 — see handy form pages 2-3



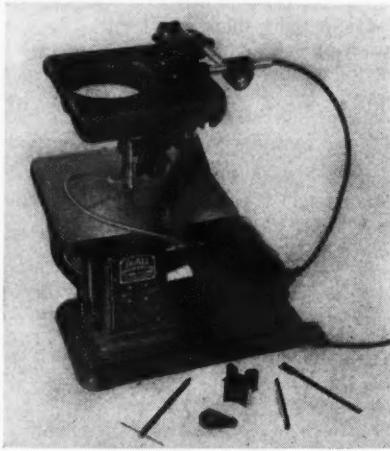
### File, Saw or Hone 350 Strokes per Min. with Bench Filer

$\frac{1}{4}$  hp unit assures 100% vertical file position despite warped or twisted file shanks

USES — Precision bench filing machine for filing, sawing and honing operations.

FEATURES — Neoprene bellows keeps chips out of mechanism, provides intermittent air jet through flexible tube to remove chips at point of work. As in smaller FH-1 model, this machine incorporates patented universal joint clamp which assures 100% vertical file position despite warped or twisted file shanks.

DESCRIPTION — Model FH-10 is powered by  $\frac{1}{4}$  hp., 110 volt, 1724 rpm., AC motor providing approximately



Bench filer machine

350 strokes per minute. A file setting square aligns file, hone or saw before universal joint is tightened. Overarm backup roller gives support to the tool.

Tilting table is  $10\frac{3}{8}$ " square. Machine has  $1\frac{1}{2}$ " stroke, and file shank capacity of  $\frac{1}{8} \times \frac{3}{8}$ ". Tools are actuated by scotch yoke mechanism running in oil bath. Window in housing shows correct oil level. Vertical shaft bearings are adjusted by locking thumb screws on outside of housing.

Standard equipment includes files, saw and honing stone. Illuminated magnifying attachment and diamond hones are available. For complete description of unit, write for folder D137.

THE DOALL COMPANY, Dept. CP, 254 N. Laurel Ave., Des Plaines, Ill.

When inquiring specify CP 2025 — see handy form pages 2-3

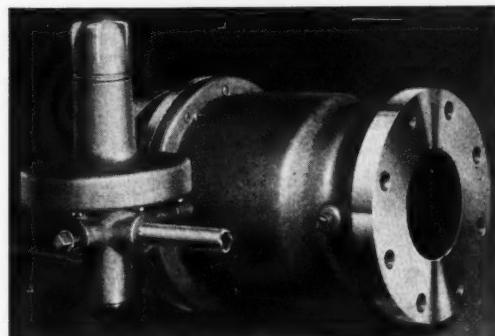
JULY, 1947

## MAINTAINING A FIXED Fluid Level.

... 6

### MILES AWAY!

One of the many outstanding Grove Back Pressure installations is illustrated at right. In this application the Grove Flexflo Back Pressure Regulator is maintaining a constant head on an elevated 6-mile waste water line—automatically controlling the discharge of hot salt water. These units are especially suited for handling highly corrosive, erosive and hazardous fluids with no possibility of seepage or leakage. Positive bubble-tight shutoff is assured.



Grove Flexflo Back Pressure Valves are available in a full range of sizes for high and low pressure service.



★ POSITIVE BUBBLE TIGHT SHUTOFF

★ HIGH FLOW CAPACITY

★ MAXIMUM CONTROL-ACCURACY

★ NO STUFFING BOXES OR PACKING GLANDS

★ NO FIXED ORIFICES IN CONTROL SYSTEM

SEND TODAY  
FOR YOUR COPY OF  
NEW BULLETIN #813



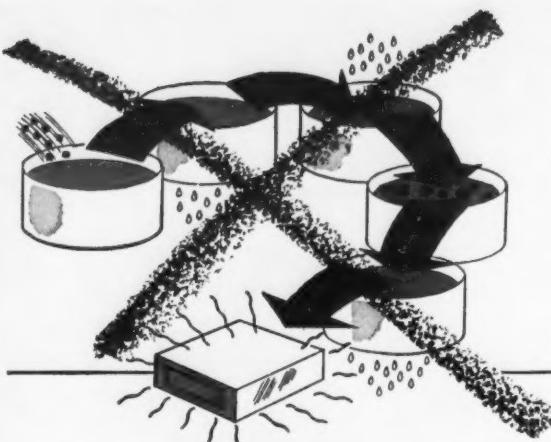
# GROVE FLEX-FLO BACK PRESSURE and RELIEF VALVES

### GROVE REGULATOR COMPANY

6329 HOLLIS STREET, OAKLAND 8, CALIFORNIA • Eastern Sales and Export Office: 30 Rockefeller Plaza, New York City  
Factory Branches: 108 Portwood, Houston, Texas • 1930 West Olympic Boulevard, Los Angeles 6, California

When inquiring specify CP 2026 . . . see information request blank, pgs. 2-3

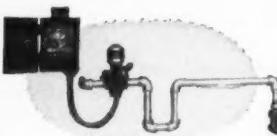
Page 77



**H**ow to simplify a complicated six-step sequence of washing and drying a cellular metal "sponge", so porous that it floats in water — was the problem faced by this well-known firm.

## AGAIN... the answer is CENTRIFUGING

This case study, one of many in our files, offers convincing evidence that AT&M centrifuging saves time, space and money in chemical processing. A cost comparison between your present methods and centrifuging involves neither expense nor obligation. It will pay you to make use of this confidential service of AT&M's experienced engineers. In the meanwhile, for the latest information about AT&M Centrifugals and the savings their unique features bring you, mail the coupon below today. AMERICAN TOOL & MACHINE COMPANY, 1425 Hyde Park Avenue, Boston 36, Mass., 30D Church Street, New York 7, New York.



### AN AT&M PLUS

One reason for AT&M Centrifugal superiority is the Automatic Sprayer element . . . which is precisely engineered to function at pre-determined time and pressure . . . assuring exact measurement of liquid at all times.

SAVE TIME, SPACE AND COSTS WITH

# A.T. and M. CENTRIFUGING

AMERICAN TOOL & MACHINE COMPANY  
1425 Hyde Park Ave., Boston 36, Mass.

Please send information on centrifuging applied to the following processes:

- Extraction     Filtration     Dehydration     Coating     Precipitation
- Sedimentation     Impregnation

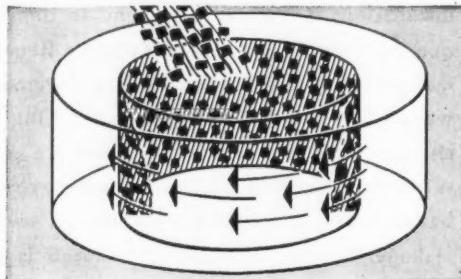
Write here any other process.....

Name .....

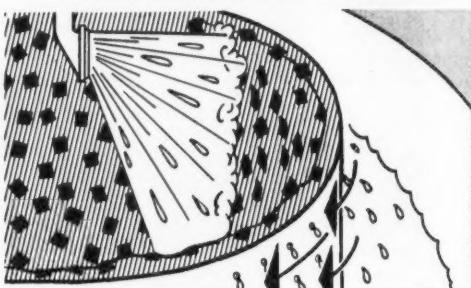
Company .....

Address .....

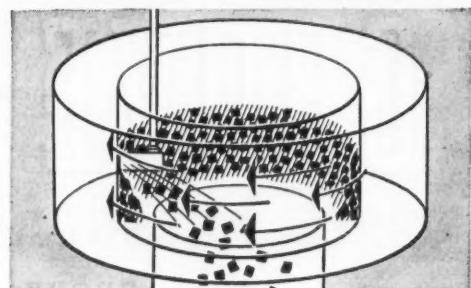
When inquiring specify CP 2027 . . . see information request blank, pgs. 2-3



To handle the cadmium, AT&M installed a centrifugal with a large, thin-walled perforate basket and a specific loading speed to build up a thin, even cake.



An automatic sprayer washes the cake down to the proper acidity (pH) while centrifugal force spin-dries it, forcing the liquid out through the basket perforations.



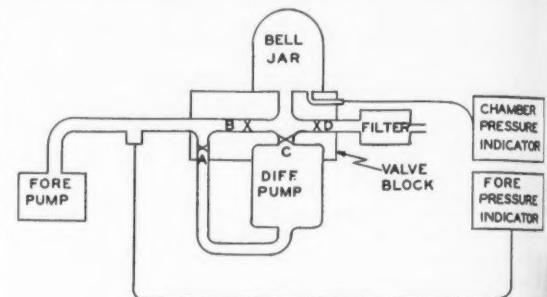
At a positive unloading speed, and with a special discharger, the load is plowed out through the bottom of the basket.

## Production

### Use Vacuum Unit for Research, Control or Production

Applies coatings, evaporates metals or salts, freeze dries; handles 18 and 29" bell jars

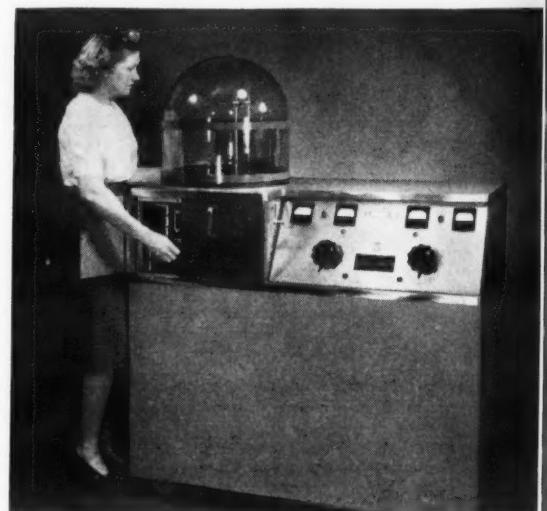
USES — Vacuum unit for research, control and production. Has wide range of usefulness, including: Preparing specimens for electron microscope, using either silica replica or shadow casting methods; vacuum or freeze drying; vacuum coating; evaporating and condensing non-reflecting and mirror surfaces, special coat-



Layout of vacuum system

ings on metals and non-metals; evaporating conducting coatings on master records or coating lenses and vacuum tubes.

Also for evaporating metals and salts; vacuum distillation; sputtering; desiccation. For studying (1) lubricant behavior at low pressures, (2) discharges in gases at low pressures, (3) phosphors under electron and ion



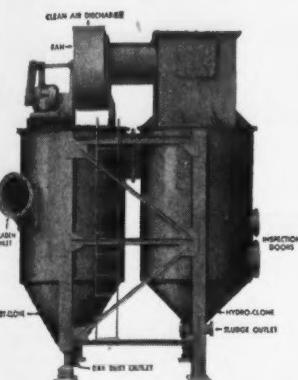
Type EMV vacuum unit

bombardment, (4) electrical and physical properties of materials at low pressures in various atmospheres.

Useful for conducting various operations and experiments in different atmospheres and at different pressures.

FEATURES — Versatile and flexible. Short pumping time. Accurately maintains low vacuums until operations are complete, thus assuring uniform adherence and

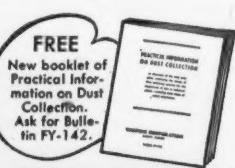
## Reclaim Valuable Dusts with the Wet-Dry Type Hydro-Clone



This is a twin unit that recovers coarser materials dry, and suppresses the fines with water, reducing them to sludge. It handles heavier loads than other filters or separating devices, including high temperature dusts that would burn out cloth screen collectors.

The Whiting Hydro-Clone has no moving parts...no spray nozzles to clog...no cloth bags or screens to replace. Available in capacities from 2,000 to 30,000 cfm. Write for Bulletin FY-117 for full information.

**WHITING**  
CORPORATION  
15667 Lathrop Ave.  
Harvey, Illinois



When inquiring specify CP 2028 — see handy form pages 2-3

from A to Ω

From Alpha to Omega, or from beginning to end, FMC can supply you with all the equipment you need for a complete plant.

### A FEW EXAMPLES FROM OUR STOCK

- 3 Hi-Pressure Autoclaves, 4'x7½'; 42"x24'; 6"x10'
- 4 Simpson and Lancaster Muller type Mixers
- 15 Columns, Stills, Evaporators, all types
- 20 Centrifugal Extractors from 20" to 40"
- 25 Mikro and Fitzpatrick Comminutors — Grinders
- 14 Filter Presses, standard makes, all types, sizes
- 4 Devine No. 11 Vac. Shelf Dryers, 42"x42"
- 12 Rotary Dryers — Drum Dryers — Vac. & Atmos.
- 30 Tablet Presses, single punch and Rotary
- Large Stock of Packaging Equipment

Liberal Prices Paid for YOUR Surplus Equipment.  
FIRST IS THE WORD FOR MACHINERY.

**FIRST MACHINERY CORP.**

157 HUDSON STREET, NEW YORK 13, N.Y.

When inquiring specify CP 2029 — see handy form pages 2-3

JULY, 1947

## Production

appearance of coatings. Assures duplication of research conditions and results. Easily moved.

**DESCRIPTION** — May be used for vacuum coating objects up to 13" diameter, 24" high. Inlet in base plate of vacuum chamber admits gas after chamber is evacuated. Most of gas may be removed without drawing gas through diffusion pump. Requires less than 6 min. to draw 0.1 micron Hg. vacuum. Handles 18 or 29" bell jars, raising or lowering them by motor-operated hoist.

Diagram of vacuum system shows: sound-proofed mechanical fore pump which lowers pressure to about 50 microns in 4 min. or less; flexible metal fore line with copper pipe connections; 3-stage, water-cooled vertical oil pump with 400-watt variable resistor oil heater, thermostat and panel indicator light; valve block, with valve positions altered by a single manually-operated crank. Contains 4 line valves.

Power supply variable from 0 to 7500 volts. Delivers currents, at highest voltage, up to 65 milliamperes. Six pairs of terminals in vacuum chamber can each carry 50 amperes, and filaments connect to terminals singly, in series or parallel, or in combinations.

For additional facts, request 8-page, illustrated bulletin, "RCA Vacuum Unit, Type EMV."

RADIO CORPORATION OF AMERICA, Engineering Products Dept., Dept. CP, Camden, N. J.

When inquiring specify CP 2030 — see handy form pages 2-3

Temperature control demands  
Eagle-Picher Insulations



## Eagle-Picher Super "66" Insulating Cement

all-purpose . . . for permanent efficiency

"Springy Ball" pellets of Eagle-Picher Mineral Wool give Super "66" tremendous insulating efficiency. In addition, this all-purpose insulation actively inhibits rust on metal equipment. It sticks to any shape surface, and withstands temperatures up to 1800 F. Write for complete technical and application data.

Let these Eagle-Picher products  
also save you money . . . power . . . time

Supertemp Block • Blankets • Low Temperature Felts  
Insulating Cement • Loose Wool • Stalastic • Insulseal  
Pipe Covering • Insulstic • Swetcheck • Finishing Cements

*Solve your Ventilating Problems with*

**INTERNATIONAL**

**DUCT BOOSTERS**  
**STACK FANS**  
**AND BLOWERS**

If you have a problem of forced draft or ventilation, send for descriptive literature showing typical installations in ships and industrial plants, apartment houses and public buildings.

ASK FOR BULLETIN No. 102

**INTERNATIONAL ENGINEERING INC.**  
DAYTON 1, OHIO.  
NEW YORK, 15 PARK ROW—CHICAGO, 407 S. DEARBORN

When inquiring specify CP 2031 — see handy form pages 2-3

**EAGLE-PICHER**  
INSULATIONS for  
High and low temperature

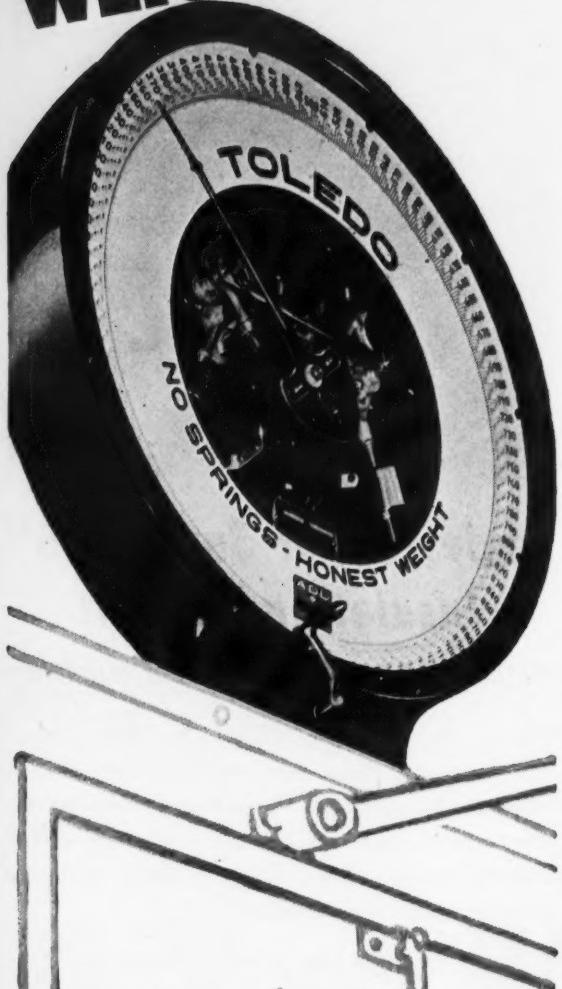


THE EAGLE-PICHER COMPANY  
CINCINNATI (1), OHIO

When inquiring specify CP 2032 — see handy form pages 2-3

Page 79

**POINTING THE  
WEIGH FOR CLOSER  
COST CONTROL**



TOLEDOS today meet industry's demands for greater accuracy in controlling costs... all the way through production!

Whatever your quality or cost-control problems in weighing, counting, force-measuring, batching or testing... Look to Toledo! At Toledo—you get the broad background of engineering know-how that has designed the world's most complete line of scales. Send for catalog.

Toledo Scale Company, Toledo 12, Ohio.

**TOLEDO**  
**HEADQUARTERS FOR SCALES**

When inquiring specify CP 2033 — see handy form pages 2-3

Page 80

## Production

### Mixes Materials in Suspension Within Circular Tanks

Axial agitator for vertical flow handles 3000 to 20,000 gals. per min.



Axial agitator

**USES** — Axial agitator for vertical flow applications. For agitating and mixing materials in suspension.

Especially designed for circular tanks of comparatively large diameter and low height or small diameter and great height.

**DESCRIPTION** — Unit is mounted vertically within a tube located concentrically in tank. Cutaway view shows impeller, drive shaft and center bearing which may be made of steel, stainless steel, or rubber-lined.

Impeller is designed in sizes from 24 to 72", with capacity to move 3000 to 20,000 gals. per. min. Agitator is furnished complete with draft tube, baffle if required, and V-belt drive. Agitator shaft may be direct connected to vertical gear head motor, flat or V-belt driven to meet plant requirements.

Complete details will be forwarded on request.

D. J. MURRAY MANUFACTURING COMPANY, Dept. CP, Wausau, Wis.

When inquiring specify CP 2034 — see handy form pages 2-3

### CHEMICAL PROCESS PLANTS

Designed, Engineered, Constructed, Equipped  
To Turn Out Your Product Profitably!



If you need facilities quickly, that will operate with utmost economy and efficiency, consult this seasoned staff of chemists—engineers—builders, experienced in every commercially significant process and method. Abreast of latest trends; one responsibility from plan board to the last valve.

Investigate the benefits of handling your next plant project or equipment purchase through this established firm.

CHEMICAL DIVISION • FIDELITY BLDG. • KANSAS CITY, MO.

**J.F. Pritchard & Co.**

ENGINEERS • CONSTRUCTORS • MANUFACTURERS  
for the CHEMICAL, PETROLEUM, GAS & POWER industries

Offices in Key Cities Coast to Coast

Consult Sweets Files, Chemical Engineering Catalog, Refinery Catalog, ASH & VE Guide for full information.

When inquiring specify CP 2035 — see handy form pages 2-3

## GOODALL BOOTS and CLOTHING

For Protection Against Oils, Acids, Chemicals

**OIL RESISTANT BOOTS** — Short black boots are durable, light weight, comfortable. Made of high quality rubber, treated to resist the action of oil; with all-Neoprene sole and heel.

**"TOE-SAVER" BOOTS** (Full-hip, Three Quarter and Short), BOOTEES, SHOES — Featuring the built-in steel safety toe, in contrasting color for easy identification by safety inspectors.

### COATS, JACKETS, APRONS, GLOVES —

Acid, oil and chemical resisting, for plant workers and laboratory technicians. Coats and jackets are designed for roominess and comfort. "Good seal" Synthetic Gloves are smooth, tough, flexible; with special grip finish for picking up small or slippery articles.

Contact our nearest branch for details and prices.



**GOODALL RUBBER CO., INC.**

THE GOODALL-WHITEHEAD COMPANIES

Philadelphia • Trenton • New York • Boston • Pittsburgh • Chicago • St. Paul • Los Angeles  
San Francisco • Seattle • Salt Lake City • Houston • Factory: Trenton, N. J. • Est. 1879

When inquiring specify CP 2036 — see handy form pages 2-3

Here's  
an air actuated  
valve with the air  
cylinder built right  
into the bonnet!



If lack of head room is keeping you from installing air cylinder operated valves, the new Hills-McCanna Model 3700 Valves are the answer to your problem. The air cylinder is built right into the bonnet—the piston rod of the air cylinder serving as the valve stem. You get the proved advantages of Hills-McCanna Saunders Patent diaphragm valve design in a compact air operated assembly. Write for full details and specifications. HILLS-MCCANNA CO., 2370 W. Nelson St., Chicago 18, Ill.



### Check THESE FEATURES

No packing—leak tight—no sticking or hunting  
—no wirerawing. Sizes: 4" through 12".  
Max. press 125 lbs. psi.; temp. to 180°F,  
standard or 220°F, special.

**HILLS-MCCANNA Diaphragm Valves**

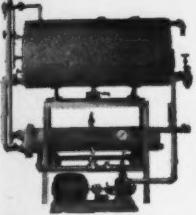
Remote operation with air and water cylinders, diaphragm motors or gear motors by manual or automatic control.

When inquiring specify CP 2037 — see handy form pages 2-3

CHEMICAL PROCESSING Previous

# SQUEEZE

Every Pound of Steam from Your Boiler  
with a  
**SCHAUB Heat Reclaim SYSTEM**  
SAME BOILER... SAME FUEL... MORE STEAM!



You can get extra steam from your present Boiler by stopping flash heat losses. A Schaub Heat Reclaim System saves wasted B.T.U.'s by re-using "flash" steam that ordinarily escapes from the condensate receiver vent.

This "lost heat" is transferred to the feed water on its way to the boiler and builds feed water temperatures up to 260° F. — or higher. Automatic water level and make-up are provided for. Write today for full information.

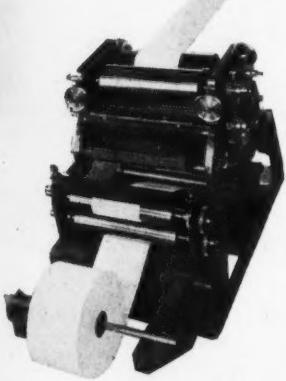
**SCHAUB SYSTEMS — The Key to Boiler Room Efficiency**

**FRED H. SCHAUB ENGINEERING CO., INC.**

2113 South Marshall Boulevard • Chicago 23, Illinois

When inquiring specify CP 2038 — see handy form pages 2-3

**RIGHT START FOR A Fine Finish**



UNIVERSAL TYPE  
COATING MACHINE  
... IOI ENGINEERED

It augurs well for a fine finish on any web material - fabric, paper, or film - when it gets off to a flying start on an IOI universal type coating machine. Available for webs up to 60" wide, machines provide unusual flexibility

of operation, easy interchangeability of coating method and accuracy of coating thickness.

Powered by mechanical, hydraulic or electronically controlled drives, they can be synchronized with windup stands, drying oven conveyors, and tension or pull rolls. IOI coating machines are precision machines throughout, adaptable for roller coating, dip and flow coating or scraper knife coating. They are typical of IOI ingenuity in the engineered application of heat in continuous operations.

See our Catalog in Sweet's File-Process Industries. Complete details of IOI installations adaptable to your industry are also available in booklet form.



**INDUSTRIAL OVENS, INC.**  
13825 TRISKETT ROAD, CLEVELAND 11, OHIO

When inquiring specify CP 2039 — see handy form pages 2-3

JULY, 1947

## Production

### Constant Carry-Over Assured by Test Kit

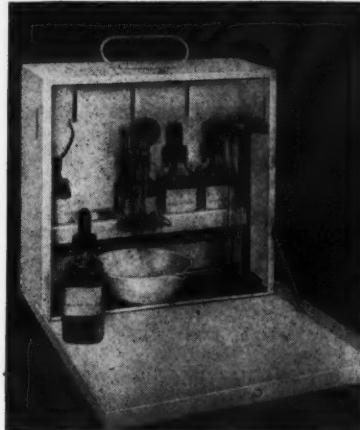
Portable 7-lb. unit determines salinity of condensate, distillate

**USES** — Portable testing kit for distillate or condensate water. Designed for on-the-job analyses.

For making accurate chloride determinations and insuring constant carry-over control for stationary boilers.

**FEATURES** — Easily carried or hung up at any required location. Cover, when opened, provides rigid working shelf containing full instructions.

**DESCRIPTION** — Cabinet is of adequately heavy gauge steel with white, acid-resistant finish inside and out.



Portable condensate tester

**OPERATION** — A 100 ml. sample of water to be tested is obtained by pouring two 50 ml. portions, measured in the 50 ml. cylinder, into the casserole. Six drops of phenolphthalein indicator are then added to sample. If sample turns pink, indicating alkalinity, 5% sulfuric acid is added, drop by drop, until pink color disappears.

Then, 10 drops of potassium chromate indicator are added, turning sample a bright yellow.

Next, N/25 silver nitrate is slowly added from specially designed automatic microburette until slight orange-red color develops throughout sample. This is end point.

The brick-red color resulting from adding still more silver nitrate gives a reading past the end point. Results are read directly from burette in grains per gallon. Details on request.

TruTest LABORATORIES, Inc., Dept. CP, 20 S. 33rd St., Philadelphia 4, Pa. 4, Pa.

When inquiring specify CP 2040  
— see handy form pages 2-3

When inquiring specify CP 2041 — see handy form pages 2-3

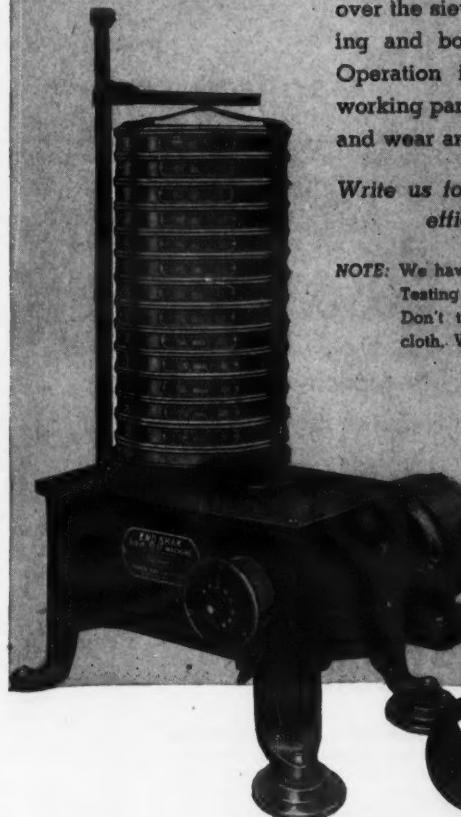
Newark  
"END-SHAK"  
TESTING SIEVE SHAKER

Bring your laboratory and plant operating results into closer relationship by applying the same fundamental principle of screening to both.

With "END-SHAK" the sieves are given an ideally combined reciprocating and turning motion which causes the sample to spread uniformly over the sieve area eliminating jumping and bouncing of the particles. Operation is smooth and with all working parts submerged in oil, noise and wear are reduced to a minimum.

Write us for additional data on this efficient test shaker.

**NOTE:** We have a service now for re-covering Testing Sieve Frames at nominal cost. Don't throw away frames with worn cloth. Write us.



NEWARK  
for ACCURACY

# Newark Wire Cloth

336 Verona Ave., Newark 4, N. J. COMPANY

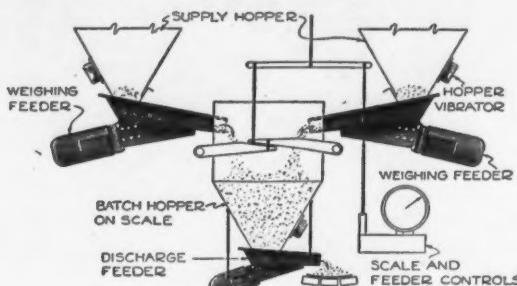
7-NWC-3

When inquiring specify CP 2041 — see handy form pages 2-3

Page 81

**SYNTRON**  
"Automatic"

## BATCH WEIGHING



**Provides—**

**Accuracy of Batch—Simple Control—Selectivity**

Syntron Electric Vibratory Feeders interlocked with scale control permit the handling of any one, or a combination of any number of bulk materials to be accurately and automatically batched at the same time.

**What is your problem? Write us about it.**

**SYNTRON CO., 110 Lexington, Homer City, Pa.**

When inquiring specify CP 2042 . . . see information request blank, pgs. 2-3

## Installing a Cascade Cooler?

For flexibility in capacity...  
for high heat-transfer rate...

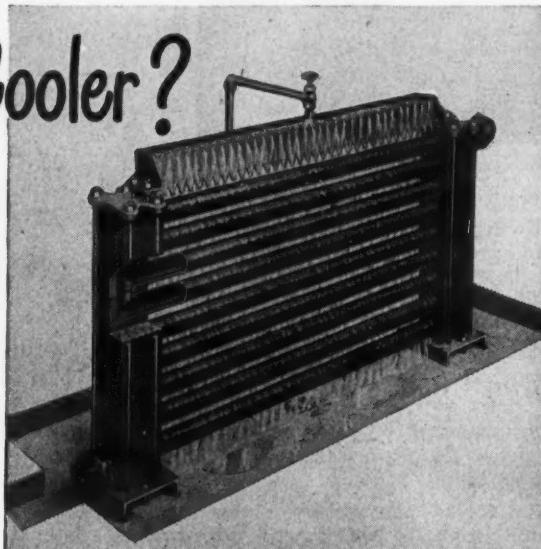
use the

## "KARBATE" Sectional Cascade Cooler

CASCADE coolers made of "Karbate" material—National Carbon Company's impervious graphite—are compact, light in weight, easy to install. They are constructed of standardized interchangeable parts. Capacity may be adjusted at any time to your processing needs, simply by adding or removing the standard sections.

"Karbate" impervious graphite coolers offer an exceptionally high rate of heat transfer. This property, coupled with unmatched resistance to chemical attack, makes "Karbate" sectional cascade coolers ideal for handling a greater number of corrosive chemicals than any other practical high heat-transfer material.

All parts for these coolers are carried in stock and both complete coolers and replacement items are available for immediate shipment. "Karbate" coolers come in five sepa-



rate sizes, with inside pipe diameters of 1", 1½", 2", 3", and 4". If you have not yet received Catalog Section M-8807-A, the bulletin describing "Karbate" Sectional Cascade Coolers in detail, write to National Carbon Company, Inc., Dept. CP.

The term "Karbate" is a registered trade-mark of  
**NATIONAL CARBON COMPANY, INC.**

Unit of Union Carbide UCC and Carbon Corporation

30 EAST 42nd STREET, NEW YORK 17, N.Y.

Division Sales Offices: Atlanta, Chicago, Dallas, Kansas City, New York, Pittsburgh, San Francisco

When inquiring specify CP 2043 . . . see information request blank, pgs. 2-3

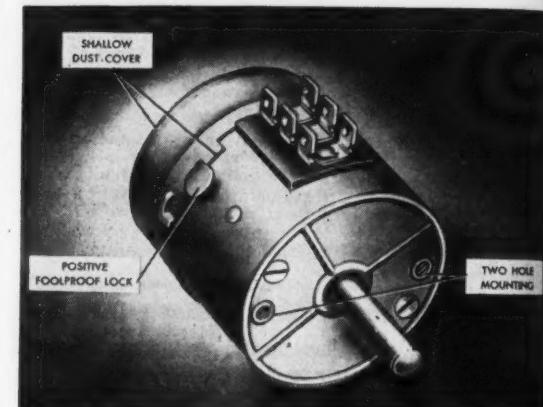
## Production

### 50% Less Space Required to Remove Attenuator Cover

Mechanically improved models contain no moisture-absorbing parts

**USES** — Mechanically improved line of attenuators.

**FEATURES** — Unit may be mounted within smaller space. Manufacturer estimates this unit requires 50% less space to remove new, shallow dust cover than previous model. Dust cover removes with one hand. No screws or knurled nuts to strip or misplace. No fiber and other moisture absorbing parts.



Mechanically improved attenuator

Good electrical contact between front of unit and back cover.

**DESCRIPTION** — Two-piece can has "foolproof" lock. Can is non-ferrous, with attractive finish. Dust-proof housing is totally shielded. Ground lug on can may be supplied if required.

Two-hole mounting standard on new type units, but single-hole mounting may be obtained. All dimensions are interchangeable with preceding models. Additional information furnished on request.

DAVEN COMPANY, Dept. CP, 191 Central Ave., Newark, N.J.

When inquiring specify CP 2044 — see handy form pages 2-3

\*

### Pumps, Regulates Volume of Liquids at Same Time

Stroke adjusts, without stopping, to within 1/750 of full length of stroke

**USES** — Improved type stroke adjustment for Milton Roy chemical pumps. For regulating, while running, the volume of liquid pumped.

For controlled volume pumping where one or more liquids must be pumped in precisely metered quantities. Also for pumping volumes as low as 1 pint per hour. Step-valve shown is advantageous for pumping weak acids, alum solutions and hypochlorites for chlorinating water supplies.

**FEATURES** — Quickly and conveniently reset, while running, to any predetermined stroke length.

**DESCRIPTION** — Furnished as original equipment on

**CHEMICAL PROCESSING Preview**

## STAINLESS PROCESSING EQUIPMENT

Built to Your Own Specifications

We carry in stock for immediate fabrication an ample supply of high grade sheets of

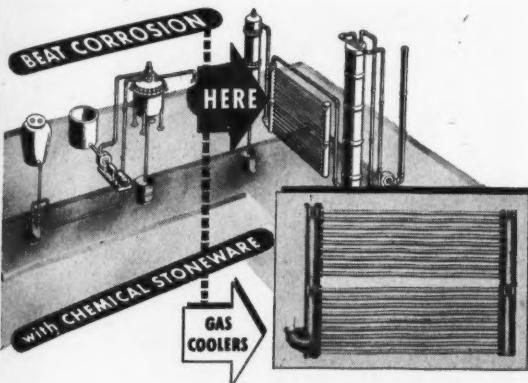
STAINLESS STEEL      MONEL METAL  
ALUMINUM      COPPER  
NICKEL SILVER

Send us your inquiries for

VATS    TANKS    TROUGHS    PANS  
All-Metal and Rubber-Lined  
SPECIAL STAMPINGS  
COMPLETE ASSEMBLIES

**THE EDWARDS MANUFACTURING CO.**  
743-783 Eggleston Ave. Cincinnati 2, O.

When inquiring specify CP 2045 — see handy form pages 2-3



For cooling Corrosive Gases equipment MUST: (1) resist acid fumes, (2) have relatively high heat transfer, (3) be of simple construction for economical installation and maintenance.

General Ceramics Coolers are (1) high grade Chemical Stoneware, corrosion proof against all acid gases except Hydrofluoric, (2) manufactured with heat transfer tubes fabricated of special stoneware body not only superior in thermal shock resistance and physical strength, but with 3 TO 4 TIMES THERMAL CONDUCTIVITY of standard stoneware, (3) designed with

sturdy simple construction for accessibility of parts, easy cleaning and convenient tube replacement without dismantling. The widely used coolers pictured have withstood the stringent action of hot (up to 200° F) saturated chlorine from the cells. Use one or a multiplicity of units for varying capacities. An installation of General Ceramics tubes for gas coolers is your guarantee of a satisfactory gas cooling operation.

Send for Circular A illustrating this equipment. For specific problems, ask for our recommendations in a letter with complete details.

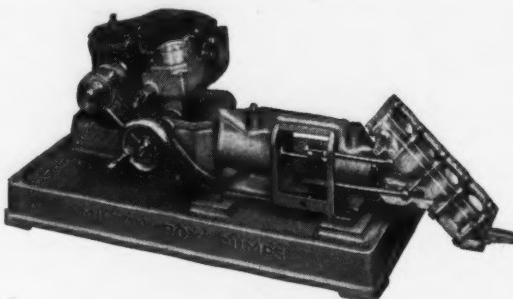
**GENERAL CERAMICS** and Steatite Corp.  
Chemical Equipment Division • Keweenaw, New Jersey

When inquiring specify CP 2046 — see handy form pages 2-3  
ULY, 1947

## Production

manufacturer's standard chemical pumps. Provides precise control of plunger stroke by means of hand wheel. Vernier dial permits resetting to within 1/750 of full length of stroke without stopping pump. Pumps also are available with automatic motorized stroke adjustment.

Valves and parts supplied in any metal or alloy which



Pump stroke adjustment

can be cast and machined, also in certain plastics materials to meet most corrosion-resistance requirements. Step-valve shown is made from methyl acrylate, a transparent plastic. Fully described in Catalog 146, forwarded on request.

MILTON ROY COMPANY, Dept. CP, 1380 E. Mermaid Ave., Philadelphia 18, Pa.

When inquiring specify CP 2047 — see handy form pages 2-3

The Heart  
of a Good Filter  
is its  
**FILTER LEAVES!**

You Can Depend On  
**KLEIN**  
**FILTERS and**  
**FILTER LEAVES**

- Positive Filtration...No Clogging
- Full Drainage

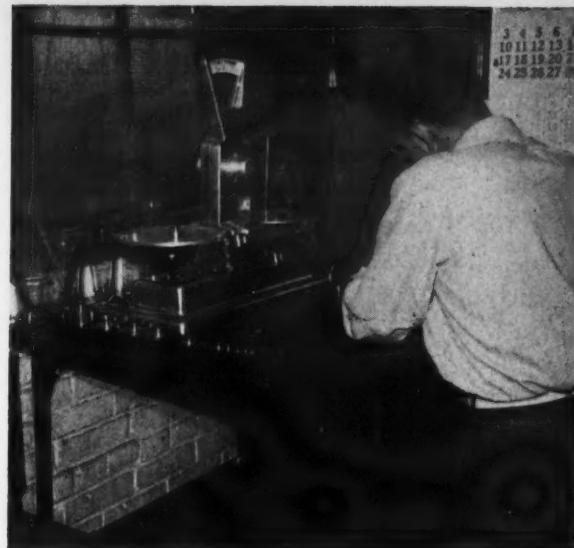
Klein Ideal Diatomaceous Earth Filters and the exclusive Klein Filter Leaves, in combination, assure positive filtration at all times. Operation, cleaning and maintenance costs are at a minimum with Klein Filters. In addition, many radical innovations are incorporated in Klein Ideal Filters. You'll want to know about all of these if you have a brewing, industrial, chemical or food filtration problem in your plant.

ESTABLISHED 1909

Write for latest Klein Bulletin

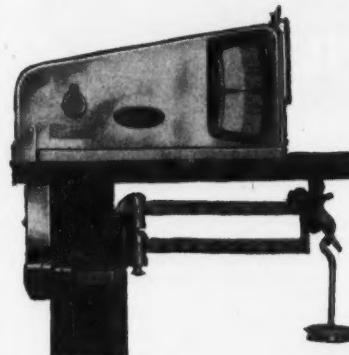
**KLEIN**  
FILTER & MANUFACTURING COMPANY  
1225-29 SCHOOL STREET • CHICAGO 13, ILLINOIS

When inquiring specify CP 2048 — see handy form pages 2-3



A technician at work with an EXACT WEIGHT Scale in a large laboratory in New Jersey.

Everyday quality of Chemical products is necessary for business today . . . more business tomorrow. This is not news, but a fact! Ask your technicians these questions: (1) how much do you depend upon your scales, little or skill, (2) how accurate are they (3) how long does a careful weighing operation take? You will probably learn your best technicians lean very heavily upon their scales, little or skill, (4) they are using ordinary even balance scales their work is too slow for best results. EXACT WEIGHT Scales correctly fitted to the operation are capable of fraction-ounce, gram or greater accuracy and, too, the formulae is compounded in less time than with ordinary equipment. The job is better done . . . easier done . . . faster done, proving that an EXACT WEIGHT Scale is the right equipment for formulae compounding. Write for details.



EXACT WEIGHT Indicator — Simplifies act of fast, accurate weighing . . . easy to install . . . furnished with rebalancing attachment for quick rebalancing for portable scales . . . no maintenance . . . trouble-free operation.

**INDUSTRIAL PRECISION**  
**Exact Weight Scales**

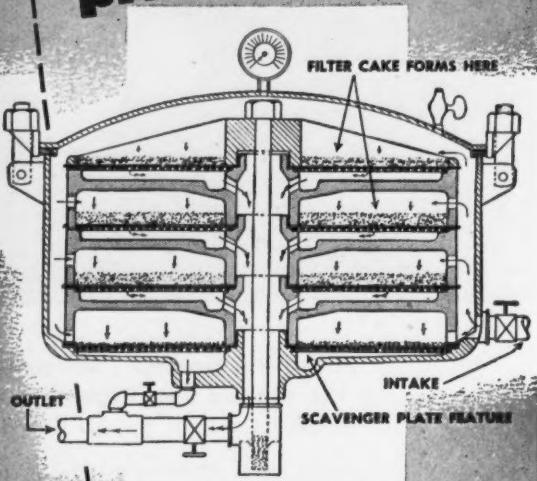
**THE EXACT WEIGHT SCALE COMPANY**

31 W. Fifth Ave., Columbus 8, Ohio  
Dept. E, 783 Yonge St., Toronto 5, Canada

When inquiring specify CP 2049 — see handy form pages 2-3

## Production

### the horizontal plate principle



... makes these the "filters that filter all liquids"—

### SPARKLER Horizontal Plate FILTERS

#### ... here's the story:

- Sparkler Horizontal Plate Filters handle any liquid from heavy varnishes to light alcohols, including products such as acids, oils, beverages, milk, pharmaceuticals, plating solutions, water, etc.
- Equally efficient performance on intermittent or continuous operation, under a wide range of temperature, pressure and viscosity conditions.
- Equally effective whether removing carbons and contact clays or clarifying and polishing with filter aids.
- Patented Scavenger Plate permits complete batch filtration. (It's virtually an auxiliary filter with an independent control valve.)
- Unexcelled filter cake stability — no slipping or breaking.

#### ... why?

Because filter media are supported on a horizontal plane and filter aids floated into position uniformly, filtration takes place uniformly over entire filtering areas. Flow through filter is always with gravity. Sparkler Filtration Is Engineered Filtration—we invite correspondence on your problem. You will receive the advice of filtration scientists with a quarter of a century of experience in a specific field.

**SPARKLER MANUFACTURING CO.**  
MUNDELEIN, ILLINOIS

When inquiring specify CP 2050 — see handy form pages 2-3

Page 84

### Oven Equalizes Interior Heat, Controls Temperatures

Lab unit has 0 to 550° F. thermostat control; vents expel fumes, maintain even heat

**USES** — Laboratory oven with equalized interior heat, for use in chemical laboratories doing precipitation, ash content and similar general chemical laboratory work, steel drawings, etc.

For obtaining accurate test results. For maintaining desired temperatures for varying periods of time, as individual schedules require.

**FEATURES** — Thermostatically controlled temperatures from 0 to 550° F. Also features a timing device which holds temperature at desired level for a predetermined period. Eliminates simultaneously varying temperatures within oven. Construction facilitates escape of obnoxious or unwanted fumes and gases. Door-latches are explosion-proof.

**DESCRIPTION** — A simple double venting device assures even distribution of heat, removal of unwanted fumes. This consists of two large vents located at either side of top of oven. A third, smaller vent permits insertion of thermometer into heat chamber.

In standard Model 5700, oven interior is steel-lined, with baked aluminum surface. For special uses, a stainless steel work chamber is available. Interior dimensions are 20 x 15 x 19". Outside dimensions, 24 x 26½ x 24". Ex-



Clear, flexible, chemically inert, tough, non-toxic, easily sterilized, Tygon Tubing is tops for laboratory and chemical plant use. Once you've tried it, you'll never be happy with anything else. If your dealer can't supply you, write direct: The U. S. Stoneware Co., Akron 9, Ohio.

AT YOUR  
LABORATORY  
SUPPLY  
DEALER

**TYGON**  
Flexible-Plastic  
TUBING

When inquiring specify CP 2052 — see handy form pages 2-3

### CLEANS OUT COSTLY DUST POCKETS

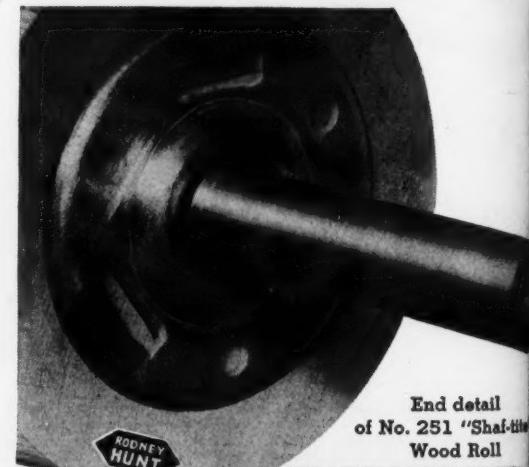
This new self-contained dust collector takes care of dust that would otherwise ruin productivity, quality and profits. It's small enough to be put in any "dust pocket"—yet has proven features of large Pangborn collectors. Minimum piping and installation expense. Pangborn's "CK" is described in Bulletin 286. Address Pangborn Corporation, Hagerstown, Maryland, world's largest manufacturer of dust control and blast cleaning equipment.



**Pangborn**

PANGBORN CORPORATION, HAGERSTOWN, MARYLAND

When inquiring specify CP 2051 — see handy form pages 2-3



End detail  
of No. 251 "Shaf-tite"  
Wood Roll

### "SHAF-TITE" ROLLS solve many roll problems!

The exclusive "Shaf-tite" end construction, strongest wood rolls, plus longer life and lower cost are all features of Rodney Hunt "Shaf-tite" Rolls that insure the solution of many industrial roll problems. Send for catalogue today.

**RODNEY HUNT MACHINE CO.**

273 MAPLE STREET, ORANGE, MASS.

When inquiring specify CP 2053 — see handy form pages 2-3

CHEMICAL PROCESSING Previews

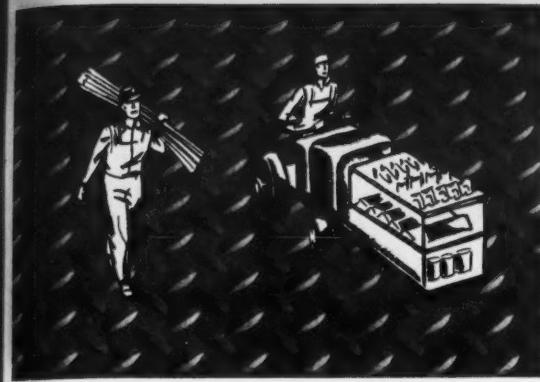
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38 S.  
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Wh  
JULY



## Sure Footing for Men and Machines

Here is super-tough steel flooring designed to provide positive traction. Even when wet, the angular projections resist slipping and skidding. Cleans easily, drains freely, and is convenient to cut, form, or weld. Stocked by leading warehouses.

**INLAND STEEL COMPANY**

38 S. Dearborn St., Chicago 3, Ill. • Offices: Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul

**INLAND  
4-WAY FLOOR PLATE**

When inquiring specify CP 2054 — see handy form pages 2-3

WRITE  
FOR  
BOOKLET

## I-R CHEMICAL PUMPS thrive on any diet!

They are available in "Ircamet", the new nickel-chromium-molybdenum alloy that is so successfully handling a wide variety of corrosive liquids and suspensions.

These chemical-tolerant centrifugal pumps are offered in the following size ranges:

**CLASSES MC, MCS, HC, HCH:** In Ircamet, bronze, and cast iron. Capacities up to 1300 gpm and pressures up to 100 lbs (230 ft) at temperatures up to 275°F.

**CLASS CSR:** In Ircamet, alloy steels, bronze, carbon steel, and cast iron. Capacities up to 4000 gpm and pressures up to 70 lbs (160 ft) at temperatures up to 800°F.

There is an I-R engineer near you, who will gladly help with your pumping problems. Ask for Chemical Pump catalog No. 7095.

**Ingersoll-Rand**

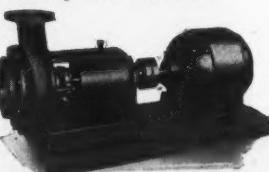
10-922

Cameron Pump Division

11 Broadway, New York 4, N. Y.

SEVENTY-FIFTH ANNIVERSARY

COMPRESSORS • AIR TOOLS  
ROCK DRILLS • CONDENSERS  
TURBO BLOWERS  
CENTRIFUGAL PUMPS  
OIL AND GAS ENGINES



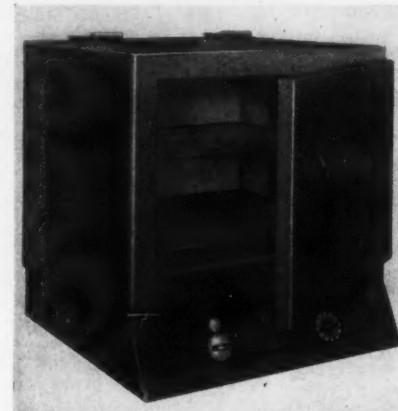
When inquiring specify CP 2055 — see handy form pages 2-3

JULY, 1947

## Production

terior finishes are either black kinkled or alpo green baked enamel.

Oven consumes 2800 watts at 110 volts or 220 volts single



Equalized interior heat laboratory oven

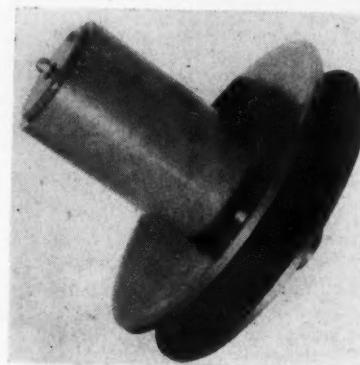
phase. Standard equipment includes two expanded metal trays, a built-in pilot light indicating on-off. More complete data will be furnished on request.

THE K. H. HUPPERT COMPANY, Dept. CP, 6830 Cottage Grove Ave., Chicago, Ill.

When inquiring specify CP 2056 — see handy form pages 2-3

## Variable Pitch Pulleys Feature Vertical, Horizontal Mountings

Adaptable to standard, constant speed motors



Variable pitch pulleys

**USES** — Line of variable pitch pulleys for vertical as well as horizontal shaft mountings.

**FEATURES** — Maintain constant centerline, permitting use with V-groove companionsheave. Maximum key area incorporated in new design is said to result in longer equipment life plus quieter operation.

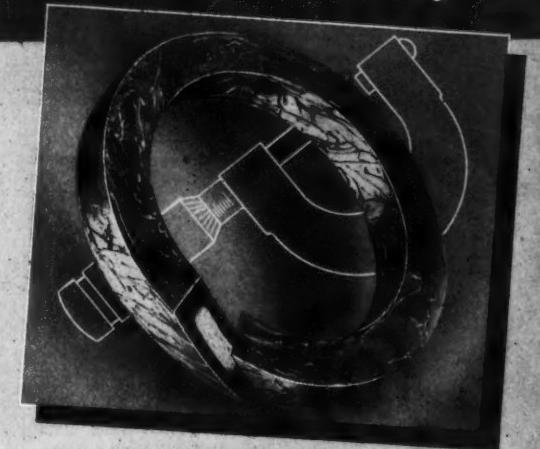
**DESCRIPTION** — Adaptable to standard constant speed motors of 1/3 to 2 hp at 1750 rpm, giving variable speeds within ratio of 3:1. Models for both higher and lower hp ratings are also planned.

Bases and belts are supplied with pulleys which may be installed on new machinery or equipment already in service. Additional information will be forwarded on request.

GERBING MANUFACTURING CORPORATION, Dept. CP,  
154 E. Erie St., Chicago 11, Ill.

When inquiring specify CP 2057 — see handy form pages 2-3

# DURAMETALLIC Packings



PRECISION made die-molded packing rings by Durametallic present 3 points of sealing satisfaction:

1. They provide a perfect fit for your stuffing box.
2. They save time, labor and eliminate waste.
3. They are tailor-made to insure a more accurate packing installation.



Write Today for  
File DMCP . . .

Containing illustrated bulletins on Durametallic Packings —with specifications and data toward answering your sealing problems.

DURAMETALLIC CORPORATION  
KALAMAZOO MICHIGAN



CHICAGO • DALLAS • DETROIT • HUNTINGTON W. VA. • HOUSTON  
KANSAS CITY MO. • LOS ANGELES • MONTREAL • NEWARK  
BATON ROUGE LA. • PITTSBURGH • ST. LOUIS • SALT LAKE CITY  
SAN FRANCISCO • SEATTLE • TULSA • YOUNGSTOWN O.

When inquiring specify CP 2058 — see handy form pages 2-3

Page 85

## Production

*Get TOP PROTECTION*

WHENEVER your plans include stainless steel protection for your products or plant equipment, look to INGACLAD Stainless-Clad Steel for top protection at bottom cost.

**INGACLAD** costs much less than solid stainless.

**INGACLAD** fabricates more easily than solid stainless because of its permanently bonded backing of mild steel.

At present, IngClad is available only in Sheets and Small Plates

**WHY NOT SEE WHAT INGACLAD CAN DO FOR YOU?**

Originated and produced by

**INGERSOLL Steel Division**

BORG-WARNER CORPORATION

310 South Michigan Avenue • Chicago 4, Illinois  
Plants: Chicago, Ill.; New Castle, Ind.; Kalamazoo, Mich.

**INGACLAD**  
STAINLESS-CLAD STEEL

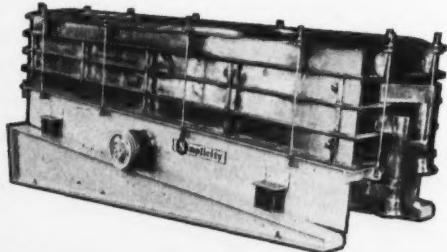
When inquiring specify CP 2059 — see handy form pages 2-3

## THE SIMPLICITY SOLUTION for STREAM POLLUTION—

Simplicity Gyrating Screens are enabling manufacturers and processors throughout the country to utilize nearby streams for industrial waste disposal without creating costly controversy or ill will over a chance to pollute the stream. That's because Simplicity Screens eliminate the solids from such waste before they have

a chance to pollute the stream. In a meat packing plant, for example, a Simplicity 3' x 6' Double Deck Screen (9 mesh top deck and 12 mesh bottom) receives drainage from a slush box and removes practically all the remaining meat so that clear water is discharged.

Simplicity Gyrating Screens are available in sizes ranging from 2' x 3' to 5' x 14' with 1, 2, or 3 decks. Let our engineer study your problems and requirements and recommend the model specifically suited to your production. Write for complete particulars.



**Simplicity**  
TRADE MARK REGISTERED

ENGINEERING CO.  
DURAND, MICHIGAN

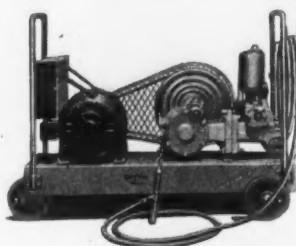
SALES REPRESENTATIVES LOCATED IN ALL PARTS OF THE U.S.A. •

When inquiring specify CP 2060 . . . see information request blank, pgs. 2-3

Page 86

## Clean Vats, Bins and Walls with Portable High Pressure Unit

Uses 300 to 500 lbs. water pressure; cleaning compounds may be added



High pressure cleaning unit

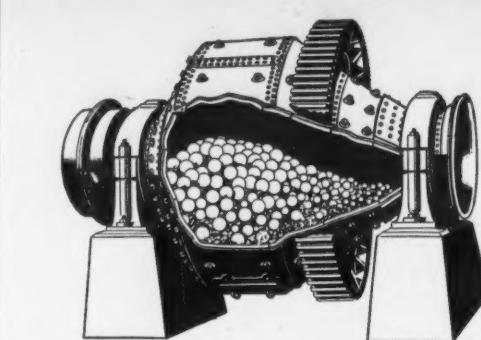
and hard-to-reach places. For thorough cleaning of all kinds of food processing equipment.

**FEATURES** — Eliminates tedious handwork. Reduces time and expense of cleaning, especially on work which is done daily. Gives efficient protection from bacterial contamination and depreciation to all types of mobile or stationary equipment.

Strong cleaning compounds may be dissolved in the water to become part of the spray solution for more effective cleaning, as special metals in pump prevent such

**USES** — Portable and skid-type high pressure cleaning units for sweeping accumulations of residue and refuse from walls, floors, tanks, vats, conveyors, storage bins, peelers, screens, kettles, extractors, mills and pulpers.

Designed especially for heavy duty work



## The Versatile CONICAL MILL

For . . .

- Wet or Dry Grinding
- Coarse or Fine Grinding
- Ball or Pebble Grinding Media
- Open or Closed-Circuit Grinding
- Hard or Soft Material

Write for Bulletin 13-D

**HARDINGE**  
COMPANY INCORPORATED

YORK, PENNSYLVANIA — 240 Arch St. • Main Office and Works  
NEW YORK 17—122 E. 42nd St. • 205 W. Wacker Drive—CHICAGO 6  
SAN FRANCISCO 5—94 Natoma St. • 200 Bay St.—TORONTO 1

When inquiring specify CP 2061 — see handy form pages 2-3

**PREPVENT ACCIDENTS  
REDUCE FATIGUE  
by using TUF-TRED**

Tire  
Fabric  
MATTING



around machinery, on wet floors and ramps, and in wash rooms. Long wearing. Beveled nosing on all sides.  $\frac{5}{8}$ " thick, up to 6" wide, any length.

— also —

AMERICAN COUNTER-TRED MATTING  
AMERIFLEX HARDWOOD LINK MATTING  
NEO-CORD COUNTER TRED MATTING  
EZY-RUG RUBBER LINK MATTING  
PERFORATED CORRUGATED MATTING

WANTED! Distributors and direct factory representatives

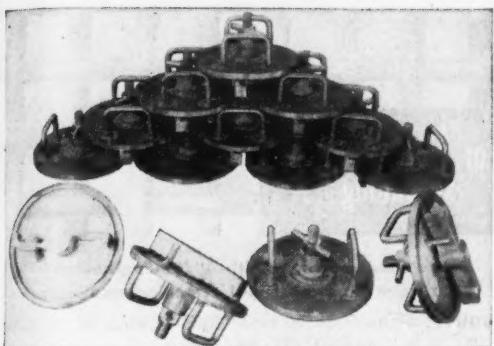
For prices and folder "A Mat for Every Purpose" write

**AMERICAN MAT CORPORATION**  
"America's Largest Matting Specialists"  
1798 Adams St., TOLEDO 2, OHIO

When inquiring specify CP 2062 — see handy form pages 2-3

**CHEMICAL PROCESSING** Preview

## ALLOY Stainless Fabrication



On every stainless job, it is well to get an Alloy quotation—to find out what you can gain in satisfactory work and exceptional service.

Tell us your needs, and ask for Bulletin CP 30.

**ALLOY Manufacturing Co., Inc.**  
Curry and Horning Road, Pittsburgh 27, Pa.

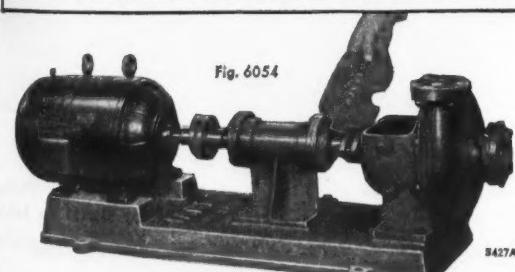
When inquiring specify CP 2063 — see handy form pages 2-3

### NO AIR LEAKAGE THRU STUFFING BOX INTO VACUUM

Taber Single Suction Centrifugal Pumps are as adaptable as they are efficient.

For handling chemical solutions, they are equipped with a drip chamber and cover. When in vacuum service on evaporators, the water-filled drip chamber prevents air from entering thru the packing. This water-sealing of the stuffing box is absolutely dependable.

FOR COMPLETE INFORMATION, PLEASE WRITE ON YOUR LETTERHEAD • TABER SPECIAL BULLETIN CL-339



TABER PUMP CO. • Est. 1859 • 320 ELM ST., BUFFALO 3, N.Y.

**Taber Pumps** for Higher Practical Performance

When inquiring specify CP 2064 — see handy form pages 2-3

## Production

compounds from harming parts.

**DESCRIPTION** — Uses high velocity jet of hot or cold water at pressures from 300 to 500 lbs.

Pump is 3-cylinder, single-action, reciprocating. All gears, bearings fully enclosed and run in oil bath. Valves, suction strainer, regulator and all working parts readily accessible for inspection. Impregnated plunger cups and built-in expansion features. For extreme conditions, an accessory nozzle and suction equipment are available for use with concentrated cleaning solutions.

Two standard sizes: 10 gpm with 5 hp motor, and 20 gpm with 7-1/2 hp motor. Both have V-belt drive. Additional information forwarded on request.

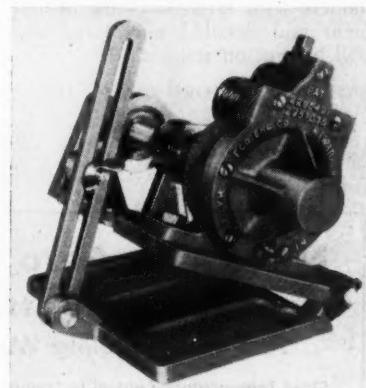
A. B. FARQUHAR COMPANY, Dept. CP, York, Pa.

When inquiring specify CP 2065 — see handy form pages 2-3

### Base Holds Pump at Any Angle to 45°; Reduces Wear on Parts

*Double-sealed, grease-packed outboard shaft bearing holds lubricant indefinitely*

**USES** — This tilting pump base is designed for use with the maker's 1/2" and 1" single and double impeller gearless pumps and is especially suitable where it is necessary to engage and disengage the pump. A convenient method of tightening a slack belt is also provided by the base which will hold the pump at any angle up to 45° by means of a wing nut.



Base for water circulating pumps

**DESCRIPTION** — The base is made of bronze throughout, and incorporates a double-sealed, grease-packed outboard shaft bearing which retains its lubricant indefinitely. Reduced wear on the moving parts of the pump is achieved through the increased stability.

ECO ENGINEERING CO., Dept. CP, 42 New York Ave., Newark 1, N.J.

When inquiring specify CP 2066 — see handy form pages 2-3

### Tell Your Handling Equipment Story

The Materials Handling Section offers you an opportunity to tell readers of Chemical Processing Preview about new developments you are contributing to this field. Submit pertinent facts to our editors for their consideration.

**CHEMICAL PROCESSING Preview**  
737 N. Michigan Ave., Chicago 11, Ill.

**Here's a better way  
to package  
POWDERS!**

- Automatic Filling
- More Production with less labor
- Guaranteed Accuracy

**TRIANGLE  
MODEL U-1  
AUGER PACKER**



**N**O more foot lever to fatigue the operator. The new Triangle Model U-1 Auger Packer automatically begins filling when the package is placed in position and stops when a predetermined amount is filled. The production is increased 15 to 25% over the previous foot lever model.

Fill your cans, cartons, bags or jars from 1 oz. to 5 lbs. with this machine at a rate of 20 to 30 per minute. Handles *any* powdered material and provides quick change-over to different products with a simple adjustment. WRITE TODAY FOR NEW BULLETIN SHOWING COMPLETE DETAILS!

**NOTE:** Due to increased production facilities these machines are now AVAILABLE IN 60 TO 90 DAYS from receipt of order

**TRIANGLE PACKAGE MACHINERY CO.**

917 NO. SPAULDING AVENUE, CHICAGO  
BRANCHES IN ▲ PRINCIPAL CITIES

When inquiring specify CP 2067 — see handy form pages 2-3



## faster cleaning For STAINLESS STEEL EQUIPMENT

If quick cleaning is one of the factors that determines your use of stainless steel processing equipment, remember this:

**A STAINLESS STEEL VESSEL WITH ROUND CORNERS CLEANS FASTER—MORE THOROUGHLY—THAN ONE WITH SQUARE CORNERS.** Whether you clean with brush or cloth—you can "get at" all the surfaces of a round-cornered vessel easily. There are no corners in which residue can hide.

Having worked exclusively with stainless steel and alloys for many years, we have developed to a high degree the techniques needed to fabricate processing equipment with round corners.

Using tools and dies of our own design, we build your vessels so that cleaning time in your plant is cut to a minimum. Result: your stainless steel equipment costs less to operate and lasts longer. Consult with us.

S. Blickman, Inc., 707 Gregory Ave., Weehawken, N.J.



When inquiring specify CP 2068 — see handy form pages 2-3

Page 88

## Production

### Center Line Scraper Agitator Scrapes Entire Jacket of Kettle

Corrosion-resistant heavy-duty kettles with center line scraper agitators are described in four-page bulletin. Kettles are made of stainless steel, nickel or monel in seven different styles with capacities from 20 to 300 gallons.

Paddles of the agitator are machined nickel alloy castings, easily removable and free of nuts, springs, or threads of any kind. Constructional diagrams and complete specification tables for all styles are included in bulletin. Literature will be sent on request. Ask for Bulletin IM-2.

LEE METAL PRODUCTS CO., INC., Dept. CP, Philipsburg, Pa.

When inquiring specify CP 2069 — see handy form pages 2-3

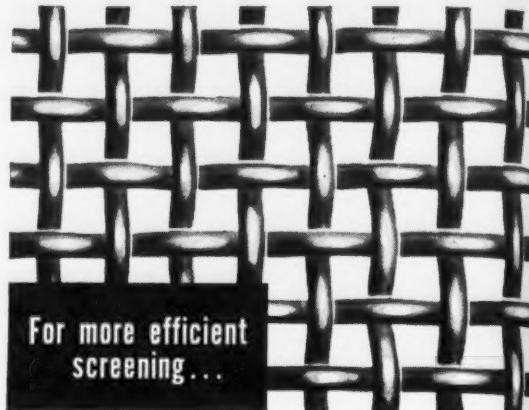
\*

### Furnaces and Soaking Pits Repaired and Maintained with Pneumatic Gun

Refractories for repairing, maintaining and constructing soaking pit bridge walls, side walls and copings are described in illustrated bulletins. A recently developed Gunmix gun, with a capacity of over 100 lbs. per minute, is the only tool required for application of the refractory. Literature contains illustrations of various models with large drawing of gun's general arrangement and detailed operating instructions. Literature will be sent on request.

BASIC REFRactories, INC., Dept. CP, 845 Hanna Bldg., Cleveland, Ohio.

When inquiring specify CP 2070 — see handy form pages 2-3



For more efficient  
screening...

Use Robins Screen Cloth—"Job-Engineered"  
to have these essential screening qualities:

**TOUGH**... withstands stresses and strains of continual heavy-duty service.

**HARD** ... resists abrasive action of rough materials. Lowers replacement costs.

**STIFF** ... maintains specified size and shape of opening.

Why not find out how Robins Screen Cloth can improve your screening operations? Write Robins for complete details. Do it today. No obligation!

**ROBINS CONVEYORS  
Division  
Hewitt-Robins Incorporated  
PASSEIC, NEW JERSEY**

When inquiring specify CP 2072 — see handy form pages 2-3

### NIAGARA Aero Cooling Does It Better! And Saves Cooling Water Costs

#### Close Temperature Control in Cooling Fluids

NIAGARA Aero Heat Exchanger cools liquids or gases to 10° of atmospheric wet bulb temperature and holds to tolerances of 2° F.

#### Compressed Air After Cooling

Furnishes drier compressed air—eliminates half the moisture allowed by conventional after-cooling methods.

#### Holding Quenching Baths to Temperature

Heat treaters increase production, improve quality, decrease rejections by using NIAGARA Aero Heat Exchanger to control quenching bath temperatures.

#### Condensing Refrigerant Gases

NIAGARA Aero-Pass Condenser increases refrigerating plant capacity, saves power. Duo-Pass prevents scaling and clogging of condenser. "Oilout" cleans the oil out of the refrigerating system.

NIAGARA AERO HEAT EXCHANGER is used in liquid cooling in industrial and chemical processes, water jacket cooling, hydraulic fluid, transformer oil, lubricating and cutting oil cooling, vapor and steam condensing.

### NIAGARA BLOWER COMPANY

Over 30 Years of Service in Industrial Air Engineering

Dept. CP-77 405 Lexington Ave., New York 17, N.Y.  
Field Engineering Offices in Principal Cities

When inquiring specify CP 2071 — see handy form pages 2-3



For Full Details Write  
Today for Bulletin 102A

When it's magnetic protection... see Eriez first

### ERIEZ MANUFACTURING COMPANY

16 East 12th Street • Erie, Pennsylvania

When inquiring specify CP 2073 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

JULY

No matter what  
your recovery problem  
...DUST ...FUME  
...FLY ASH ...MIST  
...FOG

**the COTTRELL**  
**Electrical Precipitator**  
provides highest efficiency at  
lowest overall cost!

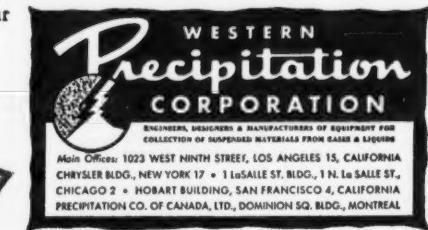
99+% RECOVERY: Even on ultra-modern Cottrell efficiencies exceed 99+%, closely approaching the perfectly perfect performance!

LOWEST DRAFT LOSSES: Cottrell draft losses are lower than any other recovery equipment—only a few tenths inch of water!

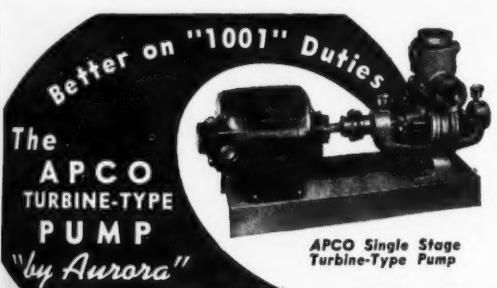
LOWEST MAINTENANCE: The Cottrell has no filters, no screens, no parts that require frequent repair, replacement or service.

WHETHER your recovery problem involves purification of gases, nuisance abatement, or collection of values now being lost in discharge gases, find out the many important advantages COTTRELL Precipitators offer. Let our trained engineers study your requirements.

Send for  
COTTRELL  
Literature



When inquiring specify CP 2074 — see handy form pages 2-3



The APCO Pump—available in capacities to 150 G.P.M. and heads to 600 feet—is the highest development of the Turbine-Type Pump. Handles any free flowing liquid including NON-LUBRICATING liquids almost indefinitely without wear. Distinguished on small capacity, high head duties—water supply, Boiler Feed, Condensation Return, Circulating, Transfer, Booster, Self Priming, Marine, Distillery, Dairy, Special Metal—"1001" Duties. Delivers with slight change in capacity against drastic head conditions.

AURORA CENTRIFUGAL PUMPS A complete line, notable for streamline coordination between impellers and shells, including Horizontally Split Case, Single and Two Stage, Side Suction, Vertical, Non-Clog, Sump, Mixed Flow, Special Design, etc.

DISTRIBUTORS IN PRINCIPAL CITIES



When inquiring specify CP 2075 — see handy form pages 2-3

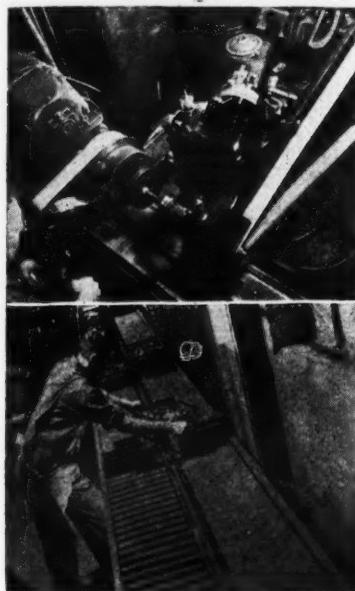
## Production

### Splice Cotton Belt at Work Site

Eliminates dismantling drive to replace endless belt

USES — Quick, simple method for splicing woven cotton belting at the work place. Useful both for high and low speed machine drives, or where belt is saturated with oil. Even on jack shaft type drives, where pulley is located between bearings, it is said to eliminate dismantling of drive in order to replace an endless belt.

FEATURES — Makes available, at low cost the long life and favorable



Applications of spliced woven cotton belting

operating characteristics of woven cotton belting. Exceptionally high power transmission factor, even when oily. Long life. Smooth joint almost eliminates vibration, aids tool life, precision machining.

DESCRIPTION — Results in a smooth, continuous, endless belt, without hooks or laces. In upper illustration, spindle of grinder is running at 18,000 rpm., using 2-ply belts. One is 2, the other 2½" wide. Lower illustration shows a solid woven conveyor belt, spliced by method described. Manufacturer states this belt has seen several years' service. Write for additional data.

UNISPICE BELTING COMPANY,  
Dept. CP, 1160 Wolfendale St., Pittsburgh 12, Pa.

When inquiring specify CP 2076  
— see handy form pages 2-3



## NEW SAFETY IN GASKETS —will you read about it?

This new little book speaks of safe-sealing for fluids under pressure with the plain honesty the subject of safety deserves.

It tells with sketches and few words how the "Flexitallic" art which established itself in wide use through safe performance has now put safety on a new level.

You are not asked to abandon one theory and accept another. The book deals with a record of performance and identifies the practices that make the record possible. You are urged to believe only what pre-testing can—and will—prove to you.

**WE'LL SEND YOU A COPY**

A post-card will serve but you will help us in record-keeping by giving us the name of your company and your title or department.

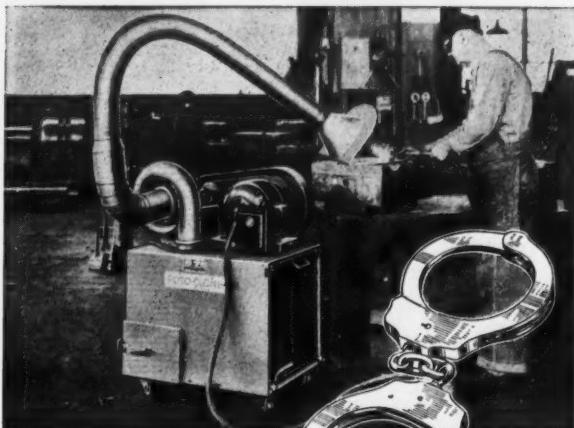


GASKETS OF THIS NAME ARE MANUFACTURED ONLY BY

**FLEXITALlic GASKET COMPANY**  
ORIGINATORS OF SPIRAL-WOUND GASKET CONSTRUCTION  
8th & BAILEY STREETS CAMDEN, N. J.

When inquiring specify CP 2077 — see handy form pages 2-3

# Handcuff dust at its source



**DUST** on the loose breeds trouble. Workmen, machinery, plant and product—all are handicapped where process dust is not controlled.

The Roto-Clone system of dust control picks up dust-laden air at its source, separates the dust, delivers the collected material to storage hopper or disposal point and expels the clean air all in a single operation—with one moving part. It's compact, requiring minimum space—costs less to install because location at or near source of dust eliminates long pipe

lines and expensive outdoor dust collectors.

Roto-Clones are available in a size and type to handle dust separation efficiently over a wide range of particle sizes and specific gravities. There's an experienced American Air Filter representative in your area. He has seen many dust problems that were "different"—and solved them with Roto-Clones. Write today for complete information.



**ROTO-CLONE**  
DUST CONTROL

**American Air Filter Company, Inc.**  
106 CENTRAL AVE., LOUISVILLE 8, KENTUCKY  
In Canada: Darling Bros., Ltd., Montreal, P.Q.

When inquiring specify CP 2078 — see handy form pages 2-3

Page 90

## Production

### Chemical and Mechanical Engineering Service Eliminates Separate Planning in Coating Process

The importance of coating methods as well as the coating itself is emphasized in 8-page booklet. The service of chemical and mechanical engineers is available in selecting and developing a special formula for a coating problem. Eliminates the necessity of dealing separately with oven manufacturers, conveyor manufacturers and paint manufacturers. All necessary engineering drawings and specifications are furnished for complete coating process. Ask for "Paint Engineering."

**BRADLEY PAINT ENGINEERS, INC.**, Dept. CP, 311 Jones Law Bldg., Pittsburgh 19, Pa.

When inquiring specify CP 2079 — see handy form pages 2-3



### Audible Signalling Equipment Reaches Every Corner of the Plant

12-page brochure, made up almost entirely of action photographs, demonstrates how code signals are used to locate key personnel, reach the maintenance man or summon the night watchman. Key person is signalled by means of chimes, mellow-toned bells or resonant gongs without disturbing other workers or tying up trunk lines. Codes may be arranged for starting and closing times, rest periods and emergency calls. "The Great Time Saver" is available on request.

**AUTOCALL CO.**, Dept. CP, Shelby, Ohio.

When inquiring specify CP 2080 — see handy form pages 2-3

### Recovering Valuable Grease with L-B LIQUID VIBRATING SCREENS



A packing plant recovers valuable grease and solids, and avoids stream pollution by the use of these L-B vibrating screens in combination with catch basins equipped with L-B collectors. Wash water from killing and dressing floors passes through these screens, removing coarser solids which go to tankage. The water is then pumped to the catch basins, where fat coming to the surface is skimmed off by the slow moving collectors as they move along the surface. Returning along the bottom of the basin, the same collectors carry the settled sludge to a hopper at the other end of the basin. The sludge is pumped to the vibrating screens for further solids removal. Send for Book 1977-A.

**LINK-BELT COMPANY**

2045 West Hunting Park Ave., Philadelphia 40  
Offices in principal cities



**LINK-BELT Vibrating SCREENS**

When inquiring specify CP 2081 — see handy form pages 2-3

## DEMING MOTOR MOUNT PUMPS

These compact, dependable pumping units have semi-enclosed, three vane impeller adjustable for capacity, head, clearance, and wear; over-size, one piece shaft; adjustable water seal; grease seal; drip-proof type motor; many other features.



**THE DEMING COMPANY**  
258 BROADWAY AVENUE • SALEM, OHIO

**DEMING**  
THE COMPLETE LINE  
**PUMPS AND WATER SYSTEMS**

When inquiring specify CP 2082 — see handy form pages 2-3

**LEE** *Kettles*

**What the A.S.M.E.  
Code and Certificate  
means to you . . . .**

... Superior Craftsmanship . . . Greater Dependability . . . Maximum Safety . . . Meets or Exceeds Federal, State or Municipality Required Safety Codes . . . Attached to every LEE KETTLE, it is your assurance of the finest kettles made.



Write For  
New Bulletin

**LEE Metal Products Co., Inc.**

418 Pine Street . . . . . Philipsburg, Pa.

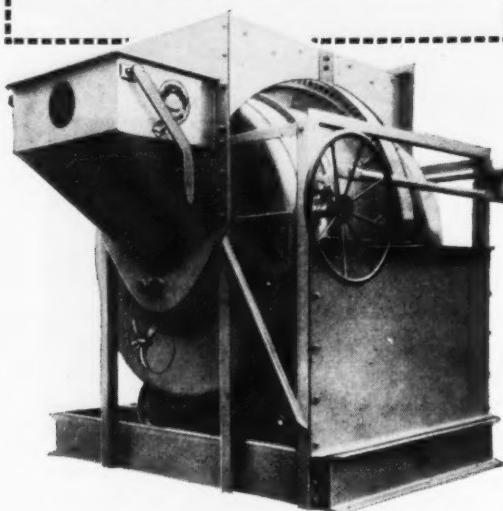
When inquiring specify CP 2083 — see handy form pages 2-3

CHEMICAL PROCESSING Preview





**4 KEYS  
TO PROFITABLE  
CHEMICAL MIXING**



*...with the exclusive  
**RANSOME** design*

**SPEED**... exclusive baffle design directs ingredients into two merging, fan-shaped formations. Fewer revolutions required for complete mix.

**UNIFORMITY**... every batch duplicates every other with minimum variation... because mixing is thorough.

**ECONOMY**... efficient mixing action cuts down required mixing time... you get more batches per shift... at less cost per batch.

**DUSTLESS, FUME-PROOF MIXING**... perfect sealing eliminates dust hazards and ammonia fumes... improves working and health conditions.

*Send for Bulletin 503*

Y7-11A

INDUSTRIAL DIVISION  
**Ransome**

MACHINERY COMPANY  
DUNELLEN, NEW JERSEY

Subsidiary of

WORINGTON PUMP AND MACHINERY CORPORATION

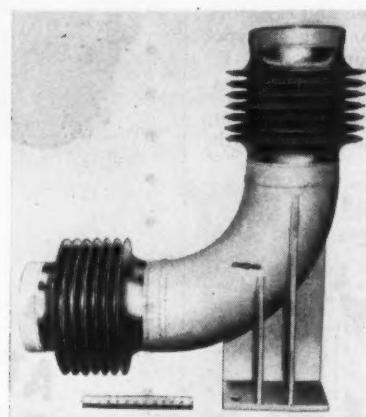
When inquiring specify CP 2088 — see handy form pages 2-3

Page 92

*Production*

**Packless Anchor Base Elbow  
Expansion Joint**

*In standard pipe sizes and choice of materials to meet conditions*



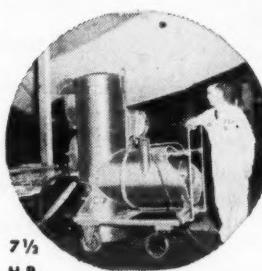
10 in. pipe size joint

**DESCRIPTION** — This new unit is a packless anchor base "Elbow" joint that is supplied in all standard pipe sizes and in a choice of materials to meet special

**WHY MAINTENANCE**

**WITH SPENCER VACUUM**

**COSTS LESS**



7 1/2  
H.P.  
Spencer is also useful on assembly lines, to remove chips and dust, to reclaim materials, to clean before painting, and to clean the finished goods before packing.

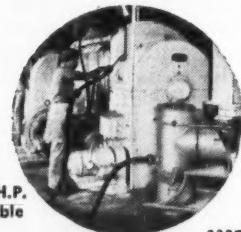
Industrial sizes from 1 1/2 to 100 H.P., portable or stationary. Tools and hose for every purpose.

Ask for the bulletins.



1 1/2 H.P.  
Portable

A powerful vacuum with easily emptied dirt containers of ample capacity cleans floors, walls and overhead structures faster and better. Equipment maintenance is reduced by keeping it clean inside and out with special vacuum tools which do not allow the dirt to spread.



1 1/2 H.P.  
Portable

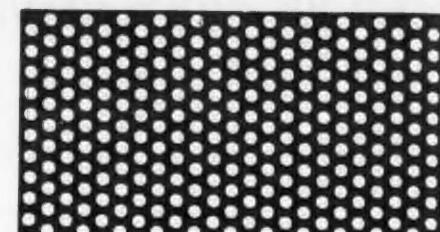
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**SPENCER VACUUM**

HARTFORD CLEANING  
THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.

When inquiring specify CP 2089 — see handy form pages 2-3

**PERFORATED METAL**



**for any screening requirement**

However exacting may be your specifications for perforated metal screens for any processing operation, Hendrick can meet them.

In its standard line of perforated metal Hendrick furnishes 340 different sizes and spacings of round perforations, 101 of square, 902 of slot, and a large variety of hexagonal "squarround", and diamond perforations. Other styles and sizes made to specification. Write for full information.



**HENDRICK**  
*Manufacturing Company*  
32 DUNDAFF STREET, CARBONDALE, PA.  
Sales Offices in Principal Cities

When inquiring specify CP 2090 — see handy form pages 2-3

**Uniform Separation**

FOOD PRODUCTS — CHEMICALS — METALLICS  
NON-METALLIC MINERALS

The new model GAYCO Centrifugal air separator makes possible the uniform and increased recovery of fine material within a range of 40 to 400 mesh.

- Greater Capacity
- Cleaner Trailing
- 99% Through 325 Mesh
- 25% to 30% greater recovery of fines
- Not affected by variation in speed or rate of feed

**The Gayco Separator Handles**  
**SUCH PRODUCTS AS**

BAGASSE	GROUND HAIR
CASEIN	GROUND OATS
COCOA POWDER	GUM ARABIC
COTTONSEED	SOY FLOUR
MEAL	SPICES
FERTILIZER	SUGAR



**Universal Road Machinery Co.**

RUBERT M. GAY DIVISION 117 Liberty St. New York 6, N.Y.  
Canadian Representative: F. H. Hopkins & Co., Ltd., Montreal  
FACTORY & LABORATORY, KINGSTON, N.Y.

When inquiring specify CP 2091 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

corrosive, temperature and pressure conditions. Each bellows in the 10-inch size shown here allows 1½ inch total movement with 30 inch overall free length.

The bellows is fabricated from stainless-steel and the "L" used is standard weight 10 in. carbon steel pipe. Expansion Joint catalog Number M-604 is available on request.

COOK ELECTRIC CO., (Magnalastic Div.), Dept. CP, Chicago 14, Ill.

When inquiring specify CP 2092 — see handy form pages 2-3

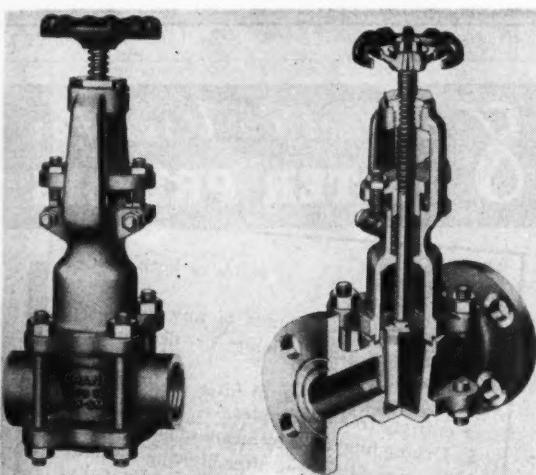
## Functions of Globe, Gate Valves Combined in One Unit

*Discharge of corrosion-resistant valve equals wedge gate, doubles globe type*

USES — Corrosion-resistant plug gate valves for providing straight-through flow in wide-open position, yet suitable for throttling service.

FEATURES — Combines, within one unit, the services of both conventional globe and gate valves. Offers little resistance to flow in wide-open position, having maximum discharge equal that of wedge gate valve and about twice that of globe valve.

Design permits close throttling at both high and low



Corrosion-resistant plug gate valve

velocities. Resistance to cutting action of fluid when in throttled position is equal that of conventional plug type globe valves.

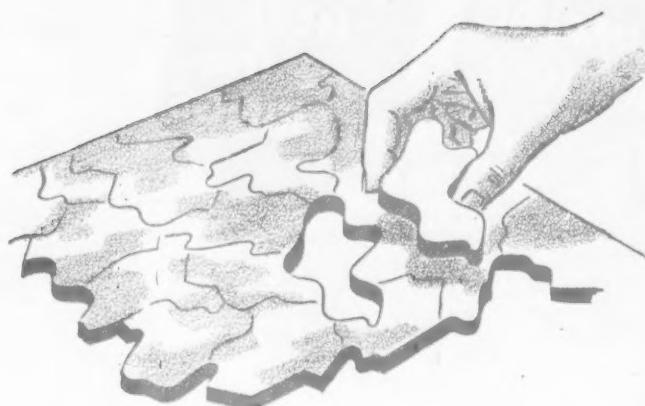
Valve not subject to sticking in closed position, even though closed while hot and opened when cold. No tendency to galling, even in small sizes.

DESCRIPTION — Outside-screw-and-yoke design. Bolted bonnet joints. Available with either screwed or flanged ends in sizes from ½ to 2". Regularly furnished in either 18-8 Mo or Monel metal. For particular corrosive conditions, they are available in various other alloys to meet specifications. Additional information forwarded on request.

CRANE COMPANY, Dept. CP, 836 S. Michigan Ave., Chicago 5, Ill.

When inquiring specify CP 2093 — see handy form pages 2-3

an *&* "reason why"



## designed to fit a particular problem

An *&* Armored Rotameters . . .

Are especially designed . . .  
To fit a requirement . . .  
Solve a problem.

They measure the rate-of-flow . . .

Of liquids under very high pressures . . .  
And hazardous fluids . . .  
Clear or opaque.

An *&* Armored Rotameter . . .

Is just one example . . .  
Of a rotameter designed . . .  
For a particular purpose.

There are other *&* Rotameters . . .

For use with corrosive fluids . . .  
For reducing effect of viscosity changes . . .  
For use in food and dairy industries . . .  
Glass pipe installations . . .  
And other uses.

Send, today, for Bulletin 18-R . . .

And the solution to your metering problem.



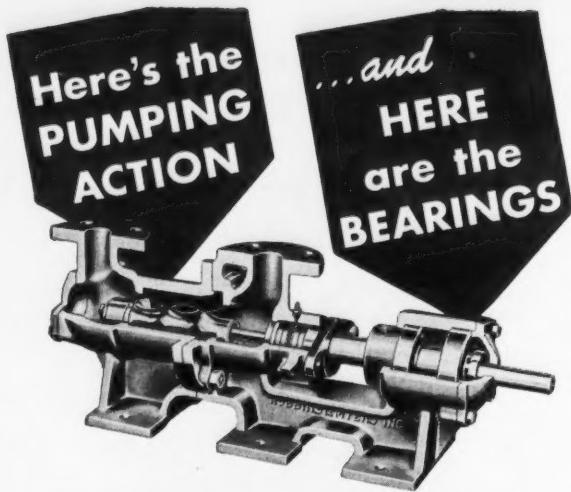
**SCHUTTE and KOERTING Company**  
*Manufacturing Engineers*

1173 THOMPSON STREET, PHILADELPHIA 22, PA

JET APPARATUS • CONDENSERS AND VACUUM PUMPS • HEAT TRANSFER EQUIPMENT  
VALVES • ROTAMETERS AND FLOW INDICATORS • GEAR PUMPS • STRAINERS  
OIL BURNING EQUIPMENT • SPRAY NOZZLES AND ATOMIZERS • RADIAFIN TUBES

Schutte and Koerting have always quoted "Firm Prices" — a principle in good business, for all business

When inquiring specify CP 2094 . . . see information request blank, pgs. 2-3



## Material Handled Can't Get into the Bearings on R & M MOYNO PUMPS

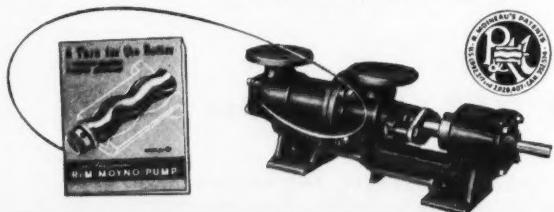
One of the many reasons why Moyno pumps stand up so well on chemicals is the excellent protection of bearings. Bearings are mounted in an individual housing entirely separate from the pumping compartment. Pressure can't possibly force material into the bearings, nor can lubricant work its way into the material. The two enclosures are some distance apart, and each is independently sealed.

### THE LONG-LIVED PUMP

Moynos are built throughout for remarkable durability. They have no pistons, no valves; use no portion of the housing as sealing surface. The patented rotor-stator pumping element, with its ever-changing seal lines, delivers positive pressure without pulsation. Low internal turbulence, and the absence of flow restrictions, avoid destructive high velocities. No Moyno body casting has ever worn out. Thousands are in service.

### SOLVE YOUR PUMPING PROBLEMS

If you use pumps, or ever expect to, you should know about the Moyno. It pumps practically everything from free-flowing liquids to non-pourable pastes; passes particles; resists abrasives and chemicals; stands up where other pumps fail. Types and sizes for every use. Write today for new free Book No. 21, and the name of your Moyno distributor.



**ROBBINS & MYERS • INC.**  
MOYNO PUMP DIVISION • SPRINGFIELD, OHIO  
HOISTS & CRANES • MACHINE DRIVES • MOTORS • FANS • FOUNDED 1878

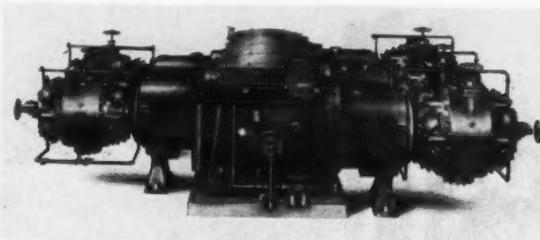
When inquiring specify CP 2095 — see handy form pages 2-3

Page 94

## Production

### 6 Sizes, Variety of Cylinders Offered in Air-Gas Compressor

Low vacuum, high pressures, intermediate pressure types available



Space saving compressor design; weight cut by use of Meehanite metal

USES — For use in chemical, oil, gas, mining and general manufacturing industries.

FEATURES — Offers unusual space saving possibilities. All cast parts are of Meehanite metal providing great resistance to wear and permitting the use of thin frame sections with low weight ratios. Compressor cylinders for this new unit are the same as those used on maker's Type GMV and are interchangeable. Provision can be made for low vacuums or for high pressures, as well as for all intermediate pressures, enabling the company's engineers to recommend precisely the proper size and



Here's protection you can see through.

- The ACME is distinguished by its larger, clear lenses which assure non-distorted, greater vision — full downward vision, too.
- ACME's exclusive dead air check valve limits the amount of carbon dioxide the wearer rebreathes.
- ACME canisters filter out hazardous gases most effectively.
- For comfort, protection and easy adjustability, specify ACME.

Write for full details.

## ACME PROTECTION EQUIPMENT CO.

Manufacturers of Full-Vision and All-Purpose Gas Masks  
3037 WEST LAKE ST. CHICAGO 12, ILLINOIS

When inquiring specify CP 2097 — see handy form pages 2-3



At its twenty-fifth anniversary the Marley Company expresses its appreciation to world-wide industry for the hearty acceptance of Marley's many practical advancements in water cooling. Through its policy of constant pioneering, the Marley Company seeks to merit the dominant position in the future that it is accorded today.



THE MARLEY COMPANY, INC. • KANSAS CITY 15, KANSAS

When inquiring specify CP 2096 — see handy form pages 2-3

## 8 Effective Uses for FILTER PRESSES

1. Filtration to recover solids or both solids and filtrate.
2. Clarification of liquids of any viscosity.
3. Bleaching, decolorizing or deodorizing liquids.
4. Thorough washing of filter cake (solids) entirely free of solubles.
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6. Heating filter cake after filtering to distill or evaporate solubles for their removal or recovery.
7. Redissolving of cake in filter press after filtering.
8. Backwashing to remove cake, without opening filter press.

On your present or contemplated filtration equipment, let us help you get more effective service. Write for Catalog. T. Shriver & Company, 802 Hamilton St., Harrison, N. J.

**Shriver** FOR BETTER FILTRATION  
**FILTER PRESSES**

When inquiring specify CP 2098 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

## Production

type of compressor cylinders for any desired volume and pressure within the horsepower limit of the unit.

**DESCRIPTION** — This motor driven compressor is available in six sizes and the variety of compressor cylinders provides a range of volumes and pressures for handling air or gas. It is built with from one to six crank throws and ranges in horsepower from 500 to 2750. The compressor stroke is 14 inches and it operates at a speed of 300 revolutions per minute, which is the same as the GMV compressor. Power for driving can be taken from a standard synchronous electric motor, an engine, or a turbine.

The one-piece box-like frame is open at the top for admitting the crankshaft and is locked by steel tiebolts to prevent bearing distortion and each connecting rod has specially designed ribs for added strength. The low and medium compressor bodies are of Meehanite metal while the high pressure bodies are of cast or forged steel as required. The cylinder valves are of a standard ring-plate type and are self-cleaning. Valve seats are renewable, and are interchangeable from suction to discharge.

Electrical or mechanical unloading by means of compressor suction valve lifters is also available, offering automatic control of flow or pressure. Automatic starting can be provided and compressor cylinders can be automatically unloaded for easy starting. Dimensions of the Type JM compressor range from 11' 7" to 24', 6" in length and from 13', 9" to 24', 2½" in width.

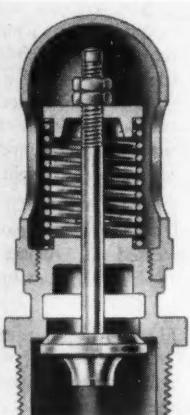
COOPER-BESSEMER CORP., Dept. CP, Mount Vernon, Ohio.

When inquiring specify CP 2099 — see handy form pages 2-3

\*

### Vacuum Breaker Protects Tanks, Kettles, Heating Units

Six sizes; all bronze construction



Housing protects breaker spring

**USES** — Extra protection for jacketed kettles, closed tanks, hot water generator coils and heating units is provided by this vacuum breaker. This device prevents collapse by admitting air into the unit when the inside pressure becomes sub-atmospheric beyond a predetermined point.

**DESCRIPTION** — The vacuum-breaker is single-seated, tight closing and of all bronze construction. The stainless steel spring can be adjusted for a set absolute pressure. It is furnished in six sizes, from ½ in. pipe thread connection and an overall height of 4⅛" to 2 in. pipe thread connection and an overall height of 6¼".

The breaker is protected by a housing enclosing the spring, preventing alteration of the setting through tampering or accidental bumping. Unit is called the Schade No. 1724 Vacuum Breaker.

ASSOCIATED VALVE & ENG'G. CO., Dept. CP, 1150 W. Marquette Rd., Chicago 21, Ill.

When inquiring specify CP 2100 — see handy form pages 2-3

JULY, 1947



# Greater PRODUCTION with ADJUSTABLE-SPEEDS

...from A-c. Circuits

Actually, Reliance V\*S Drive is an *electric transmission*. At the touch of a button your machine can be started or stopped. Turn the knob of a rheostat and it can be accelerated or decelerated smoothly—over an infinite range of stepless speed changes. And with this *All-electric, Adjustable-speed Drive operating from A-c. Circuits*, control can be either automatic or manual . . . at the machine or from remote stations. The net result of V\*S control is greater efficiency, faster production, lower costs—as already proved in every industry. That's why it will pay you to write today for Bulletin 311.

**RELIANCE ELECTRIC & ENGINEERING CO.**  
1067 Ivanhoe Road • Cleveland 10, Ohio

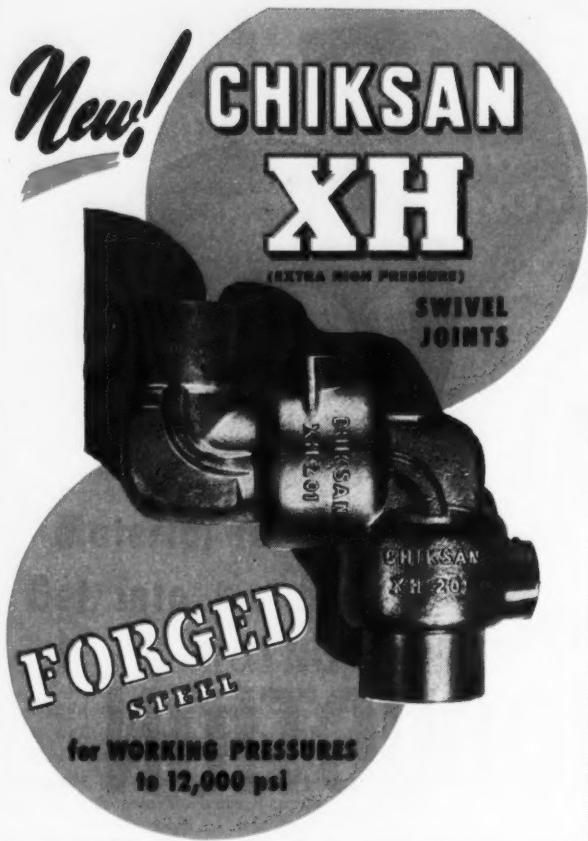
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# RELIANCE AC DC MOTORS

"Motor-Drive is More Than Power"

When inquiring specify CP 2101 . . . see information request blank, pgs. 2-3

## Production



The new forged steel CHIKSAN XH Swivel Joint combines the easy turning and effective pack-off—for which all CHIKSAN Joints are noted—with high capacity. Built of forged steel, with flame-hardened races, this new CHIKSAN Joint is designed for heavy duty services of all kinds. It makes possible the fabrication of all-steel lines with perfect flexibility, yet capable of withstanding working pressures to 12,000 psi...with greater safety and longer life. Engineering data on request.

In addition to the new CHIKSAN XH forged steel Swivel Joint, there are over 500 different Types, Styles and Sizes available for pressures from 300 to 3000 psi, and temperatures to 500° F.

REPRESENTATIVES IN PRINCIPAL CITIES

EXPORT REPRESENTATIVE: Chiksan Export Co., Brea, Calif.  
Branches: New York 7, Houston 2

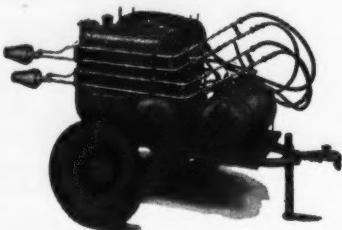


When inquiring specify CP 2102 — see handy form pages 2-3

CHIKSAN COMPANY  
BREA, CALIFORNIA  
NEW YORK 7 HOUSTRON 2

Throws Flame 6" or 15', Up to 2000° F.; Burns Kerosene, Oil

*Portable, power-driven unit said to be useful for straightening, bending, etc.*



Power-driven burner

plates, ribs, girders; starting pulverized coal or coke fires; drying foundry ladles, or preheating for welding and brazing.

Also said to be useful as a dual-purpose unit for running most small air tools.

**FEATURES** — Produces high temperature flames of various types and lengths. If desired, one burner can be operated vertically, one horizontally, at the same time, without affecting flame volume or density. Burns without pulsation. Self-starting. Portable. No gears, belts, chains.

**DESCRIPTION** — Air and fuel valves may be regulated to produce flame from 6" to 15' long, with heat of 2000° F. Operates on kerosene or any oil up to No. 3 fuel oil. Standard unit includes two 8-gal. capacity burners. Burners of 4 and 12-gal. capacity are available. Full details available in illustrated Bulletin 304, which will be forwarded on request.

AEROIL PRODUCTS COMPANY, Dept. CP, 5701 Park Ave., West New York, N. J.

When inquiring specify CP 2103 — see handy form pages 2-3

\*

### Crushes Slab-Like Chemicals, Compressed, Caked Materials

*Double-action hammer mill combines initial breaking with average finish grinding*

**USES** — Double-action hammer mill, designed for crushing chemical and industrial products made in large slabs.

For crushing whole, compressed, caked material such as cotton seed, meat and fish scrap, soy bean, chocolate and similar products.

**FEATURES** — Highly resistant to fatigue due to shock and vibration. Manufacturer emphasizes that simplicity of design and construction permit "unlimited" designs to meet changing and special requirements. Even wear and long life.

Double action combines preliminary breaking with average finish grinding.

**DESCRIPTION** — All-welded, steel-plate construction. Unit is equipped with chute-type feed, set at angle to rotor. Whole cakes or slabs are fed into battery of revolving hammers which first break material off in small

sections. These pieces are then pulverized against breaker plate and carried over grate bars for final sizing.

One-piece, heat-treated, alloy steel reversible hammers. Oversize shafts of heat-treated chrome-nickel alloy, guaranteed against breakage for 5 years. Built-in trap protects against possible damage caused by metal or foreign material entering mill.

Grate bar spacing adjusts by adding or removing spacers for controlling fineness of grind. When extra fine finished product is required, ground material can be screened externally and tailings fed back into mill or into a small finishing mill.

Bearings are standard SKF heavy-duty, oversize, double row, self-aligning. More complete information will be forwarded on request.

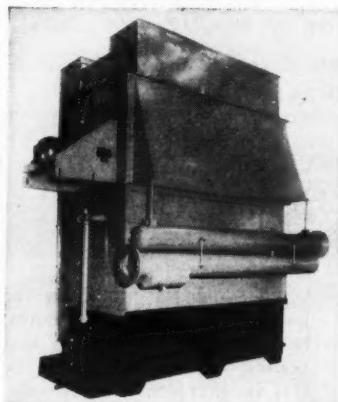
BUFFALO HAMMER MILL CORPORATION, Dept. CP, 27 Washington St., Buffalo 3, N. Y.

When inquiring specify CP 2104 — see handy form pages 2-3

\*

### Cool Compressed Air 1000 BTU per lb. of Water Evaporated

*Improved aero after cooler prevents condensation in air lines, tools*



Aero after cooler

**USES** — Improved aero after cooler for cooling compressed air and condensing and removing water vapor contained therein.

**FEATURES** — Reduces friction of compressed air in coils and secures greater contact with evaporating spray than previous model, thereby bringing compressed air temperature closer to wet bulb temperatures of atmospheric air.

Condensation of water in compressed air lines and tools is prevented due to fact that compressed air temperature reached is always lower than dry bulb temperature of ambient air.

**DESCRIPTION** — Removes 1000 BTU from compressed air per pound of water evaporated. Greater efficiency obtained by arranging compressed air coils laterally across spray chamber and introducing compressed air through oversize manifold located lengthwise outside of casing. Compressed air is withdrawn to receiver through similar manifold.

Principle of this unit is the evaporative cooling of compressed air, accomplished by passing it through coils in a spray chamber where atmospheric air is drawn through by fans, evaporating a portion of the recirculating spray water. Additional information forwarded on request.

NIAGARA BLOWER COMPANY, Dept. CP, 405 Lexington Ave., New York 17, N. Y.

When inquiring specify CP 2105 — see handy form pages 2-3

CHEMICAL PROCESSING Preview

## Discussed in This Issue - - -

# MACHINERY, EQUIPMENT and MATERIALS

Use this "quick-locator" when you want information on a specific type of machine, equipment or material. Everything discussed in this issue is given here, with page references. After checking the information here, if you want more data you can write manufacturer direct . . . or turn to pgs. 2-3 and use the handy "Information Request Slip." This is a special service provided by the Publisher . . . no obligation or charge, of course. The Publishers contact the proper manufacturers for you . . . information comes to you direct.



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The RIGHT cable for EVERY job

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Features G-E CORONOL-GEOPRENE, a high-voltage cable for power distribution or motor leads in conduit. Resists heat, moisture and most chemicals.

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## Bulletin GEA-4352



Gives data on G-E FLAMENOL, a cable for control and motor leads. Can not be harmed by acids, alkali, grease and oil. Particularly suited to severe applications.

*Write to Apparatus Dept., General Electric Company  
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**GENERAL ELECTRIC**

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## TOUGH OVERLAYS

AND

## PATCHES

FOR

## Concrete or Wood Floors



Resurface or patch broken concrete floors with tough RUGGEDWEAR resurfacer. Here's a material which will stand up under the most punishing traffic conditions. Simple to install—no chopping or chipping required. Merely sweep out the spot to be repaired—mix the material—trowel it on. Holds solid and tight right up to irregular edge of old concrete. Provides a firmer, tougher, smoother, more rugged wearing surface. Used indoors or out. Dries fast.



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Name \_\_\_\_\_

Company \_\_\_\_\_

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Hewitt-Robins Inc.	88
Kirk & Blum Mfg. Co.	70
Klein Filter & Mfg. Co.	83

### R

Rapids Standard Co. Inc.	17
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Reed Roller Bit. Co.	4
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Wyandotte Chemicals Corp.	30

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Trent Tube Mfg. Co.	53
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Tri Clover Machine Co.	23

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### W

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Worthington Pump & Machinery Corp., Compressor Div.	63
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### Y

Yale & Towne Mfg. Co.	16
Yarnall-Waring Co.	73

## "That's Interesting"

### Paint Tests May Help Lower Maintenance Costs

Substantial reduction in maintenance costs may be achieved through research now under way at Freeport, Texas, by the Dow Chemical Co. and Sherwin-Williams Co. Tests are being made to determine the exterior paints most suitable for the Dow Freeport plant but the findings are expected to provide data that can be applied broadly in industry.

Some 59 different primers and finishes are being used on 1500 paintouts and test panels. They are being subject to such chemical fumes as chlorine, hydrochloric acid, caustic, magnesium chloride, lime and many others. Durability of color is being closely studied as the plant has adopted a color scheme for buildings, lines, tankage and various equipment.

### Inventor's Ideas Listed in Digest

Over 600 summaries of patented items or those with patent applied for are listed in the first issue of the Digest of New Inventions, published by the National Foundation for Science & Industry, 203 N. Wabash Ave., Chicago. The publication is issued quarterly at \$25 per copy.

The Foundation is organized to act as a non-profit clearing house to bring inventor and manufacturer together and to stimulate creative effort and invention.

Some of the ideas include a rotary windshield wiper; battery cable terminal which fits battery posts of various sizes; all types of cable may be attached to battery; scale for weighing chemicals with interchangeable formulae plates attached to scale beam to minimize errors; a printing device that prints firm name, etc. on wrapping paper as it is pulled from roll and an adjustable board for loading and unloading freight cars.

### San Francisco Fans View Ball Game Through "Tuflex" Glass Backstop

The San Francisco Seals Baseball Club of the Pacific Coast League recently installed a "glass" backstop. This replaces the traditional "chicken wire" and improves the visibility for those seated immediately behind home plate. The glass used is "Tuflex" (Libbey-Owens-Ford Glass Co., Toledo, Ohio.)

The backstop is 101 feet long and 12 feet high with a wire screen extending above the glass section. It was found necessary to have a steel post every 7 feet and to utilize three panes of glass — each 4 feet by 7 feet installed in each 7 foot frame. There are no frames installed between the sheets of glass; that being supported only at the sides. (The glass weighs seven pounds per square foot).

Columns supporting the frame are buried in concrete blocks 2 feet square and 4 feet deep. The frame is stainless steel and was manufactured by Patterson & Elvin of San Francisco. Perfect fit of glass and frame was vital as the glass could not be cut after being made to size. This "sports innovation" has aroused interest all over the country and even in China, Peru and other distant lands.

### Dinner Pail Being Displaced by In-Plant Feeding

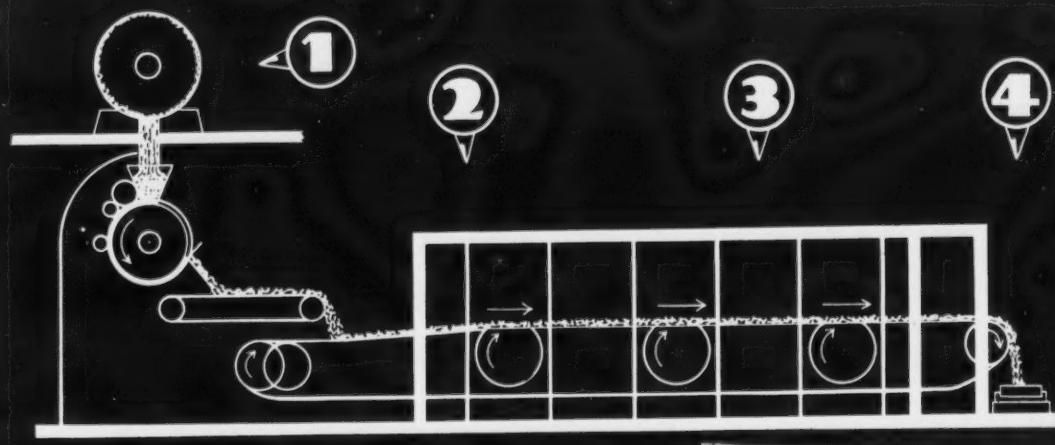
When the war ended nine million workers were receiving in-plant meals compared to about two million before Pearl Harbor. A study by the National Research Council in a large aircraft factory showed that industrial fatigue decreased and production and employee attitude improved when workers received a vitamin supplement to their diets.

A survey by the War Food Administration showed that 60% of the industrial workers eating in one plant's cafeteria improved their diets and that 25% carried their new habits into their homes. Another plant reported that after a cafeteria had been installed 50% of the workers had a green salad every day and 75% of them drank milk. (From Industrial Bulletin—May. Arthur D. Little, Inc., Cambridge, Mass.)

# LEAD ARSENATE

REDUCED TO 0.5% (B.D.W.B.\*)  
MOISTURE CONTENT  
AT RATE OF  
1,000 POUNDS PER HOUR . . .

\*Bone Dry Weight Basis



## in PROCTOR

### Continuous Conveyor System

It is entirely possible to thoroughly dry lead arsenate to a uniform moisture content, and at the same time achieve tonnage production, by means of a Proctor continuous conveyor drying system with a preforming feed. Then, too, this continuous system minimizes dust in the atmosphere of the plant—a major consideration in the handling of this product.

Here is how one typical Proctor continuous system is employed for this purpose: ① The wet lead arsenate is first dewatered by means of a continuous centrifuge. ② From the centrifuge, the material is mechanically distributed into the hopper of the fin drum feed of the dryer. The paste-like substance is pressed into grooves of the internally heated, revolving drum of this feeding device. By means of this feed, the material will be sufficiently "pre-dried" so that it can be discharged to the conveyor of the dryer in the form of small "sticks" about  $\frac{1}{4}$ " square in thickness. ③ Entering the dryer with a moisture content of 58.5% (B.D.W.B.), these "sticks" of lead arsenate lie in a bed on the perforated plate continuous conveyor of the dryer. The reduction of the material to the form of these small sticks makes it

possible for heated air, at a temperature of 250° F., to circulate through the bed of material—thus promoting rapid diffusion and subsequent speedy, thorough and uniform drying. ④ After 71 minutes of drying time, the "sticks" of lead arsenate are discharged with a moisture content of 0.5% (B.D.W.B.)—uniformly dried at the rate of 1,000 pounds (C.D.W.†) per hour.

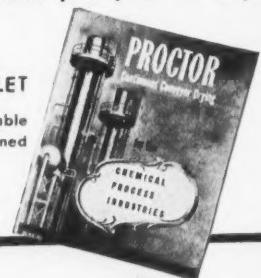
This installation represents one more instance where Proctor engineers took facts gathered in the laboratory and translated those facts into a drying system that is meeting a need in the chemical process industries. Every Proctor system is literally "tailor-made" to meet individual product and plant requirements. If drying is a part of your plant operation, and you feel there is room for improvement in your present method—consult Proctor engineers without obligation. If you contemplate expansion, it will be to your distinct advantage to settle your plans for drying equipment early.

†Commercial Dry Weight

#### THIS IS A CASE HISTORY TAKEN FROM THIS NEW PROCTOR BOOKLET

A new 12-page booklet on "Proctor Continuous Drying for the Chemical Process Industries" is available upon request. It contains many case studies showing the application for Proctor individually designed systems. Write for your copy of this informative booklet today.

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